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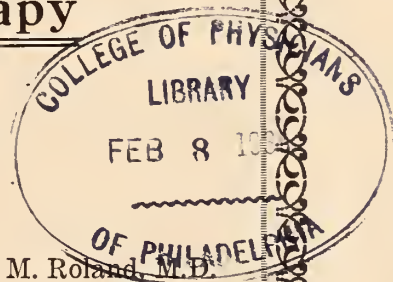
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## DISEASE OF THE NERVOUS SYSTEM OF CIRCULATORY ORIGIN\*

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OKLAHOMA CITY

Disease of the nervous system of circulatory origin may be due to various conditions, although we think of the acute cerebral accidents because they are relatively common and the most dramatic causes of this condition. As a matter of fact, we not infrequently come in contact with various types of circulatory disturbances that affect the central nervous system, the most common of which is rarely mentioned in the medical discussions. I refer to acute cerebral anemia, as fainting spells, which occur in the course of human events, at some time or other to almost everyone, and not infrequently to certain individuals repeatedly.

In order, therefore, to understand some of the factors that result in circulatory disturbances, we should enumerate the causes, which are as follows:

1. Anemia
2. Hyperemia
3. Edema
4. Arteriosclerosis
5. Hemorrhage
6. Thrombosis
7. Embolism
8. Aneurism

*Cerebral anemia*, as manifested by an acute fainting spell, is certainly a very common phenomenon, caused by emotional disturbances—fear, anxiety, or startling experiences such as the sight of blood. However, other causes than the acute vasomotor disturbance may be referred

to, viz.: shock, which is a frequent and often a serious condition, as well as excessive loss of blood. The symptoms of acute syncope are well known, viz., a sensation of faintness, with actual falling, pallor of the skin, increased perspiration, pulse that is small and rapid and often disappears entirely for a few seconds, with the return of normal function within a very few moments. Of the cerebral anemias caused by blood loss, the following symptoms are commonly seen: Subjectively the sensation is dulled, ear noises may occur, such as ringing of bells, spots before the eyes, yawning is experienced, sighing occurs, and air-hunger with syncope and complete loss of consciousness takes place. Objectively, the skin is pale, perspiration is marked, the pulse is small and rapid, respirations shallow, lasting from a few minutes to an hour. In severe cases due to considerable blood loss, the pallor may be marked, the skin become cold and clammy, the pupils contract, coma may set in, ultimately the pupils dilate and become fixed, and death is sudden. It may occur even without loss of consciousness. The appearance of the pupils is an important sign, and should always be noticed. Contracted pupils usually are a favorable omen, while dilation of the pupils is a serious omen, often ending in death. Sometimes marked cardiac failure occurs.

*Local Cerebral Anemia* is due to closure of a vessel by a transient arterial spasm, temporarily depriving a part of the brain of its blood supply. Vasoconstrictor spasm

\*Read before Section on Internal Medicine, Annual Meeting, Tulsa, May, 1934.

may occur spontaneously or as the result of pressure from an adjacent tumor, or may be a part of the picture of an endarteritis or arteriosclerosis, and not infrequently precedes a thrombus. During the course of a minute cerebral accident, as, for example, a hemorrhage in a very small branch of a vessel, a rather extensive vasoconstriction or arterial spasm may occur in the major branch so as to involve a considerable area of the brain, resulting in symptoms which, for the time being, may be very extensive. The relief of the spasm will be followed by alleviation of the symptoms, depending upon the size and location of the spasm, and the residuum represents the actual injury that remains more or less permanently, and this may be so minute as to be overlooked upon ordinary observation. Repeated cerebral spasms are known as *Intermittent Cerebral Claudication*. The symptoms of these conditions depend, naturally, upon the part involved and the size of the vessel. Those frequently seen are transient aphasia, fleeting paresis, momentary local convulsions, twitching of various muscles, particularly of the extremities, sensory disturbances of various kinds, especially numbness of the extremities, and occasionally hemianopsia. Clinically it is not infrequent to note several attacks of arterial spasm preceding a permanent change as the result of a thrombus formation. *Localized edema* may be associated with spasm, as the result of anaphylaxis, and may account for some of the symptoms that are seen during the course of various foreign protein reactions. The symptoms of this condition are variable, depending naturally upon the vessel or vessels affected, and the parts of the brain involved, but generally speaking, a fleeting paresis or numbness of a part with possibly an aphasia that lasts for a few moments or minutes at a time, may represent a disturbance in circulation of some cerebral vessel. Aside from this, local twitching of various extremities may occur, and not infrequently a convulsion is the manifestation by which this condition is recognized. Sensory disturbances of various types may occur, and occasionally disturbance of vision, particularly a hemianopsia is seen. In true vascular spasm, the symptoms last for only a very short time, not more than a few minutes, and restoration of function is complete without any permanent residuum.

*Cerebral Hyperemia*: This may be an active hyperemia as the result of actual

increase in blood flow, or a passive hyperemia due to increased pressure on the return flow of circulation. The former may be due to excitement or intense emotion, occurring frequently in people after heavy meals, sometimes in hot weather, especially following exercise. It is, of course, a common condition following acute alcoholism, and may become more chronic in this condition. Certain drugs other than alcohol may likewise produce hyperemia, especially amyl nitrite, which produces symptoms that are generalized and manifested principally by a full feeling, pain in the head and dullness. The outstanding condition that is represented by cerebral hyperemia is the result of *sunstroke*, that not only produces hyperemia, but is associated with edema of the brain, followed by parenchymatous changes. Headache is present, dizziness develops, visual disturbances are noted, there is marked thirst, often epigastric pain with diarrhea and vomiting, and sometimes prostration with deep coma. The skin is hot, flushed and dry, the pulse becomes rapid, respiration is likewise rapid and the temperature is very high, often reaching 110 or even more, with delirium. Convulsions and death may result. The spinal fluid findings show changes in the circulation of the meninges, and sometimes an increase of cells, occasionally with blood cells, indicating ecchymosis and capillary bleeding. In these cases, if unconsciousness lasts for more than a few minutes, the prognosis is bad, the mortality is often as high as 30 or 40 per cent, recovery occurs followed by headache, memory defects and polyuria. There are indications of meningeal irritation, which may result in a true meningitis of a chronic type.

The differential diagnosis must be made from: (1) heat exhaustion, which usually has a slow onset, the pulse small and rapid, skin cool and pale, and consciousness is maintained. In these cases the temperature is usually low; (2) meningitis; (3) cerebral hemorrhage; (4) uremia, and other forms of coma. Sunstroke is very rare in the dry climate that we have in Oklahoma, and all of the cases that I have seen, either so diagnosed or have felt that such diagnosis was warranted, usually proved to be some other condition, mostly meningitis or uremia, and occasionally a cerebral hemorrhage.

The management includes means of reducing the temperature, which is frequent-



ly exceedingly high, with cold packs, ice enemas, a cold bath and rubbing the skin with ice. Stimulants are useful, especially coffee, brandy, camphor in oil, hypodermically, and digitalis. Lumbar puncture is indicated inasmuch as there is frequently an associated edema with a tendency to hemorrhage and increased pressure of the cerebro-spinal fluid. Venesection is a useful procedure, and may be instituted advantageously. For restlessness sedatives are to be used, but morphine is not indicated.

*Passive Congestion* is due to pressure upon the return flow of circulation, especially as a result of tumors of the neck, such as large goitres, mediastinal pressure, the passive congestion in the course of certain cardiac decompositions and in hypertrophied, dilated hearts. The symptoms are variable, causing somnolence or insomnia, dizziness and a constant feeling of fullness. The pressure symptoms are aggravated by coughing, lying down or bending forward; in fact anything which increases the venous pressure and impedes the return flow of circulation from the head.

*Cerebral Arteriosclerosis:* This is a disease of advanced life, often insidious in onset, with headaches, vertigo, and mental disturbances, ultimately leading to hemorrhage, as evidenced by a stroke of apoplexy, or cerebral softening, following thrombosis or embolism. The results of these accidents may be sudden death or a permanent paralysis.

Arteriosclerosis of the cerebral vessels is responsible for the majority of nervous and mental disturbances occurring after fifty years of age. The types of symptoms are either somatic or psychic, and may cover a wide range, since the lesions may occur in all parts of the nervous system. However, since the lesions are of certain general types and affect certain areas predominantly, it is possible to distinguish clear cut clinical syndromes. Cerebral arteriosclerosis may be a part of general arteriosclerosis, or may occur in cases in which the palpable vessels, such as the radials, brachials, temporals may show little or no changes. It may occur with or without increase in blood pressure.

Types of arteriosclerosis from a pathological point of view do not differ essentially from sclerosis of the blood vessels elsewhere. The distribution of the degenerative changes are variable, involving perhaps the larger vessels at the base of

the brain, pons, medulla or cord, or the smaller vessels of the cortex, subcortical or basilar nuclear areas alone.

As the result of the vascular changes, there is disturbance in circulation of the brain tissue, which produces three important types of pathologic changes in the nervous tissues: (1) a diffuse atrophic type, due to interstitial changes and focal changes about the affected vessels; (2) perivascular gliosis, which results in small atrophic areas of the cortex; (3) periarteriolar lacunae, with minute areas of softening and absorption, which ultimately may become cystic, or there may be thinning of the vessel wall with the development of minute aneurisms.

As a result of these changes in the blood vessels, there may occur hemorrhage due to rupture, or to miliary aneurisms. There may result areas of ischemia with cerebral softening due to thrombosis. The symptoms depend upon the extent and location of the hemorrhage or thrombosis.

The clinical syndromes that result from arteriosclerosis of the blood vessels produce several fairly clear cut pictures which may be classified as follows:

1. Pseudobulbar paralysis.
2. Cerebral hemorrhage (apoplexy).
3. Cerebral softening (embolism, thrombosis, encephalomalacia.)
4. Aneurism.
5. Mental disturbances, arteriosclerotic type.
6. Senile dementia.

*Pseudobulbar Paralysis:* This presents a fairly characteristic clinical picture with involvement of the tongue, lips, cheek and throat musculature, clinically expressed by disturbances of articulation, phonation, mastication and deglutition. The clinical course may begin insidiously or rapidly, generally preceded by a history of one or several preceding apoplectic attacks, which may or may not be associated with permanent paralysis, or if a paralysis has been present, recovery is likely to have taken place. The speech is very characteristic with loud, explosive nasal features, so that the patient can hardly be understood; swallowing induces coughing and food sometimes regurgitates through the nose. There is considerable weakness of the lips, cheeks, tongue and palate. The cause of this disturbance is degeneration upon

the basis of arteriosclerotic changes of the basal ganglia and is usually a progressive condition often associated with mental deterioration that is common in advanced age with cerebral arteriosclerosis.

*Cerebral Hemorrhage:* Although a disease past middle age, has been known to occur in relatively young adults; however, if it does occur prior to forty years of age, a pre-existing degeneration due to syphilis must always be kept in mind, or else the hemorrhage may be associated with the development of a brain tumor which, because of its existence, produces a pressure atrophy on some of the adjacent vessels that are susceptible to bleeding. The location of the hemorrhage may be anywhere in the brain; however, there are a few principal favorite sites, viz., the internal or the external capsules, the central or basal ganglia, the optic thalamus and the striate bodies. The reason for this is that the lenticulo-striate arteries and the lenticulo-optic arteries are terminal vessels and branch off at right angles from the main stem, making them more friable and susceptible to rupture. The hemorrhage is an acute accident following vascular degeneration which may have been of long standing, the hemorrhage being naturally the result of the pathological changes. The arterial wall gives way spontaneously or under sudden increase of pressure, as a result of excitement or anger. On the other hand, many of these cerebral accidents occur when the patient is quiet and frequently when he is asleep in bed. The pathologic process in the blood vessels may be localized at any one point, from which the hemorrhage has occurred, the remaining vessels being approximately normal, showing little, if any, pathological changes.

The clinical manifestations as the result of a cerebral hemorrhage depend upon two factors: *First*, the acute and general manifestations, due to a sudden vascular accident, which results in shock; *second*, the local or focal signs due to the loss of function of the particular part of the brain affected. If the hemorrhage is of sufficient extent and severity, there results general cerebral commotion with unconsciousness as the result of the local damage, the subsequent surrounding edema with the resulting disruption of function and the destruction of nerve tissue. This occurs in all cases of acute cerebral accidents irrespective of the cause, whether due to hemorrhage, embolism, thrombosis

or injury. However, thrombosis being generally a slower process, the symptoms appear more gradually and the shock is not so severe. Preceding the hemorrhage there may be repeated slight prodromal symptoms such as attacks of vertigo, aphasia, memory disturbance, paresthesia or paresis, which clear up in a relatively short time. On the other hand, the large number of cases have no such prodromal symptoms and develop without any previous manifestations.

The shock of the onset of hemorrhage usually leads to a rapid loss of consciousness with coma, lasting a variable length of time from a few hours to many days or even weeks. Large hemorrhages may rupture into the ventricle and result in increased intracranial pressure, with respiratory symptoms, Cheyne Stokes respiration, rapid increase in blood pressure and a slow pulse. If the intracranial pressure is very high, choking of the optic nerve heads is seen. During the course of recovery mental confusion, restlessness and delirium may develop. The usual outstanding feature in the more common type of cerebral accidents results in a hemiplegia of a crossed type of paralysis with a tendency to spasticity and spastic phenomena, viz., increased reflexes, positive Babinski, clonus and a tendency to contractures that are typical of the marked hemiplegia. Because of the bilateral innervation, certain muscles are usually excluded, particularly the eye muscles, laryngeal muscles, the muscles of the back, neck and chest, those of mastication, as well as the upper facial muscles. Recovery depends upon the associated factors that occur as a result of the accident, viz., the amount of actual injury to the nerve tissues that has taken place, associated with the amount of bleeding into the tissues, the extent of the edema of the tissues, which may clear up rapidly and finally, the associated vascular spasm in the larger branches. If the last condition predominates, the symptoms may clear up very rapidly, the edema requiring a greater length of time, viz., several days, while the hemorrhage becomes absorbed very slowly. Recovery usually begins within the first few weeks and the maximum amount of recovery occurs during the first month, although some cases require many months for maximum improvement. The sensory changes are usually of less importance than the motor changes that take place; however, certain cases have anaesthesia which recover partially if not com-



pletely and trophic disturbances are likely to occur and, if so, produce disagreeable symptoms. In recovery the improvement tends to begin with return of function of the lower extremity before it does in the upper, and the tendency to spasticity is so prominent as to result in contractures that are typical and characteristic. The recovery of the facial and tongue paralysis is usually more complete and more rapid, very frequently only slight residuum remaining from this condition.

*Cerebral Thrombosis* may occur in any age in the course of acute infectious diseases, such as typhoid fever, diphtheria and pneumonia, following pregnancy and labor and in many of the blood dyscrasias including the secondary anemias, while embolus is the result of sudden closure of a vessel by a foreign substance, principally a blood clot or an endocardial vegetation in the course of subacute endocarditis. It may likewise occur following bone injuries in the form of a fat embolus, which, however, is relatively rare. The results are similar to the results of a cerebral hemorrhage; the pathological changes resulting produce areas of absorption.

*Aneurisms*, in their development, may produce the symptoms that are seen in brain tumors, viz., headache, vomiting and signs of increased intracranial pressure, although choking of the optic nerve head is rare. The dramatic symptoms as a result of an aneurism or several aneurisms are those of a hemorrhage, associated with a violent headache, unconsciousness or a convulsion with rigidity of the neck, blood in the spinal fluid.

*Mental Disturbances* due to arteriosclerosis, manifest themselves in two forms: First, changes in the vessels of the brain stem; second, changes in the vessels of the cerebral cortex. The former produce gross neurological lesions without particular mental changes, and if these do occur they are due to the complications associated with the cortical vessel disturbance. The latter type produces symptoms of headache, vertigo and disturbance of memory, fatigability, which is often mistaken for neurasthenia, and as the condition progresses, difficulty of comprehension and attention with slowing of association of ideas and a tendency to mental deterioration. Judgment is impaired in a certain direction, but well maintained in other matters. There is disturbance in emotional control, depression and a tendency to crying. Patients may become irritable or

violent but they usually have an excellent insight into their deterioration. The melancholic state resembles the maniac depressive insanity.

*Senile Dementia*, normally in old age; reduction in mental elasticity is noted, so that the circle of ideas becomes circumscribed and their interest becomes impaired, stubbornness develops and the ego becomes exaggerated. Patients become suspicious, indifferent to their surroundings, with lack of consideration for others. There is a definite limitation of interest with increasing disregard for order and neatness. They become stubborn and not susceptible to persuasion and mentality becomes generally enfeebled and judgment defective; restlessness and wandering at night, so that these individuals frequently are busy during the night hours and are more or less somnolent during the day. Occasionally paralysis occurs in these older individuals so that sexual misdemeanors may occur. Senile dementia, although usually distinctly one of old age, sometimes occurs relatively early in life in the fourth and fifth decade and may be mistaken for general paresis. It is progressive and hopeless as far as all treatment is concerned.

132 N. W. Fourth Street.

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#### HOW FAR SHOULD STATE HEALTH DEPARTMENTS GO?

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*Baby's Proper Feeding the Doctor's Problem.* One of the most frequent inquiries received by the State Department of Health is that concerning an infant's diet. It is, of course, impossible for the Department to advise or give suggestions regarding a suitable diet for any infant. It apparently is not generally realized by the laity, that food requirements vary for every infant. One infant may thrive on a given food while the next will not tolerate it. Consideration must be given to the fundamental requirements of each infant such as the protein, fat, carbohydrate, water, mineral and vitamin requirements. So far as is known, breast milk is the only universally suitable food for infants. If a baby is deprived of this he should be taken to the family physician and placed on a proper feeding. It is only after a thorough history has been taken and a thorough physical examination has been made that the proper food can be advised for any infant. It is quite obvious that such service is out of the realm of the State Department of Health.

The Department, however, has literature on infant care that is available on request. The Children's Bureau at Washington also publishes some excellent pamphlets on infant and child care which should be read by every mother who wishes to give her child the best care and training.—From *Ohio Health News*, November, 1934.

## CARE OF CHILDREN'S EYES\*

MEYER WIENER, M.D.

ST. LOUIS, MO.

Care of children's eyes begins at birth. Instillation of silver solution should be made as a routine and in addition, caution should be exercised to prevent infection of the eyes from the child's fists.

Infants are subject to an acute diplococcus infection closely resembling the gonococcus. It responds readily to treatment, however, and the organism grows readily on ordinary culture media, whereas the gonococcus only with difficulty on blood serum. Should the infection prove to be due to the gonococcus we are confronted with a serious menace to eye sight. Only the most expert care and attention will avail. In adults we have a valuable ally in the use of typhoid-paratyphoid dead bacteria used intravenously. It is a dangerous thing to use in infants and I have seen it cause death. Frequent cold compresses and keeping the conjunctival sac free of pus at all times is of the utmost importance.

The family doctor is often called to determine whether a baby can see. The infant does not observe early and may see without being able to follow an object. Since his pupil is very small the reaction to light must be most carefully observed as the excursion is necessarily limited. Again, anxious parents are often greatly concerned over lack of parallelism of the two eyes. This, in a child under one year of age, especially when it is transient, is not of particular significance. Redness and thickening of the conjunctiva of an infant's eye accompanied by persistent mucous or muco-purulent secretion lends suspicion to involvement of the tear sac. Infants cry without shedding tears for several weeks after birth, so lachrimation will not be observed. The trouble is revealed by expression of the contents of the tear sac. If discovered early much trouble can be avoided. Before birth, the sac is filled with dead epithelial cells which usually absorb or are discharged, but not always. Often, expression alone, practiced several times a day will effect a cure, whereas neglect will necessitate long te-

dious treatment and probably require operative interference. Most tear sac infections start as pure pneumococcic infections. Optochin is a specific if used early, before the infection becomes mixed. If palliative treatment will not suffice, rapid dilation with the Ziegler probe under first stage general anaesthesia will often effect permanent drainage and cure. Occasionally a second probing will be necessary. A young child can easily be handled, if one has an assistant, by placing the child's head between one's knees while the assistant holds the hands and legs while sitting in a chair placed at right angles to that of the operator. This gives the oculist freedom of both hands to inspect and treat the patient.

An excellent means of inspecting the infant's cornea is through the use of thin hair pins, bent back as retractors. They take up little room and can be discarded when they have served their purpose. A foreign body of the cornea can easily be removed with this preparation. Medicine can easily be instilled in the eye of a struggling child by dropping it in the corner, the lids being closed, and then, even in a sleeping child, gently separating the lids and letting the drops roll in.

Congenital blindness may be the result of various conditions. Cataract is not an infrequent cause. If it is uncomplicated and the eye reacts to light the prognosis after operation is good. I say, reaction of the eye to light, because sometimes the pupil is very tiny and fixed. If light is suddenly flashed into this eye, although there may be no reaction of the pupil to light, if the retina and nerve are sound, there will be involuntary blinking or closing of the lids. We have used this method in exposing adult malingerers who come with an atropine dilated pupil and deny light perception.

Congenital glaucoma may present a large cornea with shallow or deep anterior chamber, clear or cloudy cornea, but always a hard globe. Certain types of juvenile glaucoma present either a normal cornea or a cornea even larger than usual.

\*Read before the Oklahoma City Clinical Society, Oklahoma City, November, 1934.



It is of utmost importance that the tension be felt in any case where there is a possibility of glaucoma, as early operative interference is the only means of saving the sight.

Blindness from glioma of the retina is recognized through the yellowish reflex from the fundus, generally first by the parents. Immediate enucleation followed by radium or deep x-ray is imperative. It must, of course, be differentiated from pseudo-glioma due to exudate behind the retina.

Nystagmus is usually secondary to some intra-ocular defect of prenatal life. It practically always means lowered vision from some cause and should be thoroughly investigated. Albinism is always associated with nystagmus as is usually anterior polar cataract, central corneal scars and congenital defects in the macula.

It is surprising to know how many cases of blindness occur in children through unnecessary injuries. Sharp, pointed objects should be kept away from young children. Let them cut paper dolls with scissors, but furnish them with a personal, blunt pointed one. The cornea may be cut through and through and very difficult to determine in the early stage. A drop of 2% fluorescein will reveal the smallest scratch or defect.

Injuries from acids and alkalis sometimes occur in children. The best immediate relief is to place the hand over the child's mouth and nose and flush out the eyes under the bathroom faucet, a hose, or water poured with force from a bucket or other receptacle. This not only dilutes the irritant, rendering it inert for further damage, but also clears the conjunctival sac of all foreign material without doing damage itself. Castor oil is a splendid non-irritating lubricant for after use. Where the burn is superficial cold applications are soothing. With a deep burn cold is contra-indicated as it further lowers tissue vitality. Let me warn you here, of the danger of sympathetic ophthalmia. Any penetrating wound of the eye can produce sympathetic disease of the other eye with total loss of vision of the other. If one waits until the sound eye is affected it is too late to save sight. Where an eye is injured beyond hope of useful vision with probability of its shrinking, enucleation is indicated, without question.

Many congenital disfigurements can be corrected so that there will be a big improvement in the child's appearance.

These include coloboma of the lid, ptosis, epicanthus, narrowed fissure, strabismus, paralytic squint, cataract, etc. There is hardly any eye defect that cannot be either corrected or greatly improved by operation. There is certainly no excuse for anyone going around with a crooked eye. If strabismus is caught early it can often be corrected by the faithful wearing of corrective lenses and orthoptic exercises. These muscle training exercises should always follow operative interference also, in an effort to develop fusion.

Most parents seriously object to their children wearing glasses and it is my belief that entirely too many glasses are prescribed. Often a child can overcome a slight refractive error if he is in good physical trim, or a compromise can be effected by having the child wear glasses for close work only. Most of my confreres, for example, insist on their myopic patients wearing their glasses constantly in the belief that going without them will augment the tendency for the nearsightedness to increase. I do not believe that the wearing of his myopic correction has any influence whatsoever on the progress of the condition. I take it to be a stretching of the sclera due to a loss in tissue resistance to intra-ocular pressure. This is the result of loss of proper function of the endocrines associated with the period of most rapid growth. In eighty to eighty-five per cent of the cases it can be controlled and checked by administration of thyroid where we find the basal metabolism rate lowered and by the local instillation of 1-1000 solution of epinephrine. In addition, regular strenuous exercise must be urged, to stimulate the adrenals and other ductless glands.

Headaches are frequently a result of eye strain. Careful inquiry must be made in getting the history, to be sure that the headaches are associated with use of the eyes. Eye headaches are generally referred to the back of the head. Pain in the eyes and between the eyes points to sinus congestion and is felt early in the morning, getting better or disappearing as the day wears on. With persistent severe headache, intracranial involvement must be seriously considered. Ocular signs are often elusive, especially in tumors of the frontal lobe. When suspected, the taking of the central color fields may give one the very first clue to the source of trouble.

It is not infrequent that a child is brought in with the complaint that, while

he is mentally alert in all other respects, he is a poor reader and has an aversion to reading. He may have normal vision, convergence, and accommodation, good muscle balance, and no refractive error. In these cases bear in mind the possibility of congenital word blindness, which is much more frequent than one would think and if undiscovered may cause lots of grief and heartaches. It is not hard to unearth. These children will hesitate over a certain word while reading, or even mis-call it. But if this word is spelled out for them they will immediately name and recognize it. Infinite patience and help will bear fruits in this condition. Hysteria in children occurs but rarely. Inability to see clearly in the absence of sufficient physical findings can be ultimately diagnosed by the same means as those taken to discover malingering.

It is usually easier, however, because other nervous failings will always be present. This must not be confused with symptoms due to the intense desire of some children to wear glasses. Hysteria always has some underlying cause and should be carefully studied by a trained psychologist.

I need merely mention amaurotic family idiocy, that rare disease found almost exclusively in children of Jewish parentage in which a fundus examination positively identifies the disease.

With the exception of measles, the infectious diseases rarely affect the eyes seriously. I have seen a complete destruction of the upper lid the result of chicken pox. Contrary to the general teaching, I believe in flooding the room with light in measles, permitting full use of the eyes, and the use of thin pledgets of cotton in applying cold compresses to the eyes to relieve the congestion. I have not seen one serious eye complication from measles where these procedures were followed.

In spinal meningitis, metastases may occur in the eyes, but nothing can be done in the way of prevention or cure. Phlyctenular kerato-conjunctivitis is always associated with constitutional defect. If the eyes are treated in a palliative way only, or not at all, and careful attention given to diet or hygiene, a quicker cure will result. Syrup of hypophosphites compound, U.S.P., syrup of the iodide of iron and cod liver oil must be administered.

I do not believe that error of refraction should be considered much of a factor in producing recurrent styes or marginal

blepharitis. Styes are the result of a lowered tissue resistance and in addition to local treatment, something must be given to build up resistance. This can usually be done by eating of yeast, taking dilute sulphuric acid internally, or by hypodermic administration of bacterial antigens.

In treating chronic blepharitis of children it is not so much what one uses as how he uses it. I tell the patient when prescribing an ointment that he must first get rid of all the crusts as the salve will not soak through the crusts and reach the inflamed portion of the lid. Also that a little, well rubbed in, is stimulating. Too much irritates. After all signs of inflammation are gone the salve must be used for a long time to prevent recurrence. Excoriation of the outer lid angle is a clinical manifestation of Morax-Axenfeld bacillus infection and zinc drops and zinc ointment are indicated.

The ordinary acute conjunctival infection will respond quickly to one-half per cent solution of optochin hydrochloride and frequent cold compresses. There is an infection involving one eye only where the lids are thick, moderate discharge, swelling of the preauricular glands and moderate amount of pain which runs a course of from two or three weeks to several months and responds to no treatment I have tried. I have never seen the sight affected.

Swelling of the eye or lids from acute sinus infection will usually subside by draining the sinuses either with suction or shrinking of the mucosa of the nose, and irrigation. Large doses of salicylates help and sometimes intravenous dead typhoid-paratyphoid bacilli. Seldom is it necessary to open the orbit for pus.

Allergy is not at all uncommon in children. I have often seen the conjunctiva flare up and get quite red, with photophobia, which could be definitely traced to food to which the patient was sensitive.

Vernal conjunctivitis can be placed under the classification of allergy. I know of no local treatment to the eyes that has any great effect except to partially allay the symptoms such as estivin, optochin, cold water. Hot, dry, dusty weather always aggravates them. Recently we have seen startling relief of symptoms in a few cases where the nose was treated by ionization with zinc and cadmium, but this is only in the experimental stage.

Trachoma in certain areas of the United States must be considered. The disease is



not always easy to diagnose, and there may be a difference of opinion even among authorities. There are more cases on the blind pension roll of Missouri from trachoma than from any other trouble.

Educate your public. Education saves sight. Ignorance leads to blindness. There are three means of teaching the public how to protect God's precious gift, sight: The state, the physician and nurse, the parents. The state has already proved its worth. In 1907 28% of the children in the school for the blind in New York were blind from ophthalmia of the new born. In 1931 it had been reduced to 7.5%. In 1931-1932 there was not a single case of blindness in the state of New York resulting from this disease. This was due almost entirely to legislative prevention measures.

The eye physician and the nurse help in many ways. Defective vision is now caught in early school life by the school nurse and school physician. The parents are notified of the fault and advised to consult an oculist. Parents of cross eyed children are told that this disfigurement need not exist and that by means of glasses, muscle exercises, or operation it can be corrected. It means not only improvement in looks, but more self confidence and self assurance to the child. Near-sightedness always has a tendency to become worse. It can be checked in 80% to 85% of the cases by proper treatment, and the wearing of thick ugly lenses avoided.

These children should have a basal metabolism rate taken and if low, thyroid administered by their physician. They should take plenty of exercise and be told the more strenuous it is the better. A 1-1000 solution of adrenalin chloride should be instilled in the eyes three times daily and continued indefinitely until the physician is assured that the tendency for the myopia to increase has been checked.

The cooperation of the parents is of utmost importance. When a child complains of poor sight, give him the benefit of the doubt and seek an oculist's advice. Only recently a young boy was brought to me who had complained of seeing poorly for several months. Not much importance was attached to his statements. We found that the sight of one eye was practically

gone and the other reduced to less than one-tenth of normal. Careful investigation revealed the presence of a tumor at the base of the brain pressing on the optic nerves. This tumor was removed a few days ago and it is believed that the sight of one eye, at least, has been salvaged.

Do you know that each year, more than one thousand school children in the United States have eye accidents, and that most of them are avoidable? The chief causes are scissors, knives, forks, bean shooters, and explosives. Don't leave a pointed implement within reach of a young child. Never let a child point a gun at anyone, even in fun.

Tell the parents to be careful about the moral habits of people employed about their home. It is not so rare for us to have to treat a young child with a severe infection in his eye, the result of contact with a dirty rag used by some man or woman with gonorrhea. The infection can result in total loss of sight. There is another point in prevention of blindness in children which is seldom given much thought. Heredity! Many eye diseases as well as eye defects are transmitted from parent to child. A parent who is cross-eyed can look forward to having a cross-eyed child. This does not necessarily happen, but it is the natural thing to expect. Near-sighted people are apt to beget near-sighted children. These conditions are undesirable, but not sufficiently so to justify advising such a person not to have children. There are, however, many cases of very serious eye defects which can be transmitted where I have urged the parent not to have children. These included congenital cataract, congenital aniridia, pigmentary degeneration of the retina, and a host of others.

One more word about examination of school children, I am convinced that great benefit is derived by the examination of the eyes of children even in the pre-school age. In one city alone, of 1848 children examined between the ages of four and seven, 473, or 26%, were found to require the attention of an ophthalmologist.

Mere use of the eyes does not do harm, but when this use gives rise to symptoms of strain, it is a warning that something is wrong.

## CARDIAC PAIN\*

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From time to time it is of importance to correlate in one's mind the knowledge, both old and new, about a certain disease or a certain group of diseases. Likewise it is of importance at times to correlate the existing knowledge concerning a single physiological or pathological phenomenon or a single symptom. Particularly is this true when that symptom constitutes the most prominent clinical observation of an important disease or diseases, and when there exists a lack of unanimity regarding its cause. Such a symptom is cardiac pain.

It is not the purpose of this communication to present an elaborate clinical description of the diseases presenting cardiac pain, but rather to briefly review the existing evidence of the cause of the pain.

The conditions in which cardiac pain may be encountered are as follows:

1. Affections of the coronary arteries, with either narrowing of the lumen or thrombotic occlusion.
2. Affections of the aorta—syphilitic aortitis, aneurysm, aortic insufficiency or arteriosclerosis.
3. Anemia.
4. Neurocirculatory asthenia.
5. Nondescript conditions in which the pains in the region of the heart may or may not be due to cardiac disability.

The last two may be briefly dismissed inasmuch as there is no uniformity in the type of pain they produce—no organic pathological basis, and on account of their intimate association with various psychoneurotic phenomena.

The other conditions mentioned give rise in many individuals to a symptom known as angina pectoris. A great deal of confusion has existed and still does as to what angina pectoris is and what is its underlying pathological basis. It is absolutely essential in any discussion of angina pec-

toris that there be a clear understanding as to what is meant by the term. Many terms have been used, such as pseudo-angina, tobacco angina, reflex angina and angenoid. Such expressions merely serve to aid in the already existing confusion.

The original classical description of angina by Wm. Heberden<sup>1</sup> gives the essential features of the condition:

"But there is a disorder of the breast marked with strong and peculiar symptoms, considerable for the kind of danger belonging to it, and not extremely rare, which I do not recollect any mention among medical authors. The seat of it, and the sense of strangling, and anxiety with which it is attended, may make it not improperly to be called angina pectoris. Those who are afflicted with it are seized while they are walking (more especially if it be up hill, and soon after eating), with a painful and most disagreeable sensation in the breast, which seems as if it would extinguish life, if it were to increase or to continue; but the moment they stand still all this uneasiness vanishes. In all other respects the patients are at the beginning of this disorder perfectly well, and in particular have no shortness of breath from which it is totally different. The pain is sometimes in the middle, sometimes at the bottom of the os sterni, and often more inclined to the left than to the right side. It likewise very frequently extends from the breast to the middle of the left arm. The pulse is, at least sometimes, not disturbed by this pain, and consequently the heart is not affected by it which I have had an opportunity of knowing by feeling the pulse during the paroxysm; but I have never had it in my power to see any one opened who had died of it. Males are most liable to this disease, especially such as have passed their fiftieth year. After it has continued a year or more it will not cease as instantaneously upon standing still, and it will come on not only when persons are walking but when they are lying down. \* \* \* Some have been seized while they were standing still or sitting, also upon first waking out of sleep. \* \* \* The termination of the angina pectoris is remarkable. For if no accident intervenes, but the disease go on to its height, the patients all suddenly fall down, and perish almost immediately."

Thus, Heberden characterizes the condition by paroxysmal, usually substernal, pain brought on by increased demands of the heart, and by the likelihood of termination in sudden death.

Many theories of the pathogenesis of angina pectoris have been advanced from time to time but at present most of them have been abandoned, with the exception of: (1) Aortic theory; (2) myocardial ex-

\*Read before Section on Internal Medicine, Annual Meeting, Tulsa, May, 1934.



haustion theory; (3) coronary theory; and (4) the myocardial anoxemia theory.

Sir Clifford Abbutt<sup>2</sup> was the great supporter of the aortic theory and maintained that the stretching of a diseased aorta was the cause of the pain. It is true that most individuals who have died of angina pectoris did have incidental lesions of the aorta. However, the aorta can only be stretched by elevation of the blood pressure and there are many cases in which there is no preceding rise in blood pressure. Furthermore, relief can be obtained from nitrites without any lowering of the blood pressure in many instances. Probably the greatest objection to the aortic theory is that it fails to explain the phenomenon of sudden death. For sudden death is one of the most striking features of the disease, as is well expressed by Keefer and Resnik:<sup>3</sup> "Any hypothesis that attempts to explain the nature of angina pectoris must account for this remarkable feature of the disorder. The likelihood of sudden death is the one distinguishing feature that differentiates 'true' angina from all forms of so called 'false' angina. The lack of appreciation of this point as a cardinal characteristic of the disease has led to the confusion of Heberden's angina with other types of cardiac pain that should never have been called angina pectoris. The likelihood of sudden death is a feature that is indissolubly linked with the underlying mechanism of the disease. Only by including in angina pectoris such cases as are likely to end in sudden death does one isolate those cases that correspond to the original description of the disease, and eliminate the cases that bear only a more or less close resemblance to Heberden's angina. It is, of course, impossible, in a given instance, to predict with absolute certainty the ultimate outcome of the case; but when the diagnosis 'angina pectoris' is made, there should automatically be the implication that the patient may, and probably will, die suddenly."

The myocardial exhaustion theory was championed by Mackenzie<sup>4</sup> who, nevertheless, appreciated the fact that most cases of angina pectoris had coronary disease. The exhaustion theory, assuming the ability of the heart muscle to become exhausted, does not explain, for example, the frequency of angina pectoris with aortic insufficiency and rarity with mitral stenosis, though there may be equal degrees of myocardial damage; nor does it explain why angina pectoris occurs so infrequent-

ly in congestive failure wherein there is extreme exhaustion.

Edward Jenner first called attention to the intimate association of angina and coronary disease and, in fact, demonstrated this association in the heart of the illustrious John Hunter. Although sclerotic coronary changes occur in the vast majority of cases, there are no small number of undoubted cases of angina pectoris with normal coronary arteries. Another objection to the coronary theory is that there are many instances of extensive coronary arteriosclerosis without angina. This is not a serious objection, however, for Gross,<sup>5</sup> and Wearn,<sup>6</sup> and others have shown that the myocardium may have an extensive collateral circulation between the two coronary arteries and also with the Thebesian vessels.

It can be easily seen that none of the previously mentioned hypotheses is wholly adequate. Keefer and Resnik<sup>3</sup> in a comprehensive analysis of many cases of angina showed that in practically every case there existed some lesion that interfered with proper blood supply to the heart. Such lesions are: (1) narrowing of the lumen of a coronary vessel by arteriosclerotic change; (2) syphilitic aortitis, or arteriosclerotic changes in the aorta with encroachment upon the mouths of the coronary arteries; and (3) aortic insufficiency. It is obvious that the first two lesions are capable of diminishing the blood flow. Aortic insufficiency also diminishes coronary blood flow inasmuch as the coronary flow depends upon the height of the diastolic pressure (for the intraventricular pressure in systole is greater than the aortic pressure). Inasmuch as in aortic insufficiency the diastolic pressure is characteristically low, it is reasonable to assume that there is a diminished coronary flow. This has also been experimentally proved by Smith, Miller and Grober<sup>7</sup>.

Angina pectoris occurring in individuals with various types of anemia has been reported. In the majority of these there has been some associated sclerosis of the coronary arteries. There have been a few cases of angina associated with anemia that have shown at autopsy no changes in the coronary arteries, aorta or aortic valves.<sup>8,9</sup> These cases are important in that they add further evidence that the cause of the pain is diminished oxygen supply to the heart.

One of the most powerful arguments in favor of the myocardial anoxemia theory

of angina pectoris is the close similarity in its clinical aspects to coronary occlusion, a condition which beyond doubt causes an ischemia of a localized area of the myocardium. The pain of coronary occlusion is indistinguishable from that of angina pectoris in character, situation and radiation. Starting usually under the sternum it radiates to the left shoulder, the left arm, occasionally both arms, the neck, the jaw, or the abdomen; as does the spasmodic anginal pain. It is true that the pain of coronary occlusion lasts hours or days, whereas the pain of angina pectoris lasts only minutes and that various arrhythmias, friction rub, fever and leucocytosis follow, and nitroglycerine does not afford relief; but that is explained because the vessel is completely and permanently blocked and myocardial infarction follows.

Granting that in every case of true Heberden's angina there exists a lesion or lesions that cause a reduction in the amount of oxygen with which the myocardium is supplied, it still remains to be shown that anoxemia *can* cause pain and an explanation must be advanced for the indissoluble linking of the disease with sudden death.

It has long been observed that there was a striking similarity between the pain of angina pectoris and intermittent claudication. Both are spasmodic in character, brought on by exertion and relieved by rest. There can be little doubt that intermittent claudication of an extremity is caused by diminished blood supply to actively working muscles. MacWilliams and Webster,<sup>10</sup> and later Sir Thomas Lewis,<sup>11</sup> did some very significant experimental work concerning the origin of pain in skeletal muscle. They found that when the blood supply to the arm was shut off by constriction that actual pain was not caused even after an interval of as long as twenty minutes. If, however, the subject was requested to open and close the hand at the rate of one time per second, pain became severe in about 25 to 45 seconds following the beginning of the exercise. If the exercise was continued the pain became intolerable in about 60 to 70 seconds. It is a smooth pain that is continuous and does not increase appreciably with each contraction of the muscles. If the exercise stops but the circulatory arrest is continued the pain remains constant. If the circulation is released the pain subsides in a few seconds. As Sir Thomas Lewis says: "Since severe pain is

known to occur when the coronary artery is occluded, whether by ligature or by internal clot, it is difficult to refrain from concluding that it originates from the heart, as it does from the limb, through muscular ischemia, and since in the latter case it is concluded that the underlying process occurs in the muscle fiber and is due to muscular contraction, the stimulus acting actually in the tissue space, it may be assumed that similar processes underlie the pain of coronary occlusion. All our evidence is quite compatible with this view. The pain of coronary occlusion is continuous; it does not come and go with the heart beat. It begins as a slight pain and grows steadily, and often rapidly, in intensity. In these features it is like the pain derived from somatic muscle in similar circumstances. In its continuity this pain differs from that produced by overloaded involuntary muscle, as for example, the bowel, each separate contraction of which induces a simultaneous spasm of colic."

Furthermore, direct experimental evidence that myocardial anoxemia causes pain has been introduced by Sutton,<sup>12</sup> who demonstrated undoubted pain in the experimental animal by ligation of a coronary vessel, and the absence of pain from stretching the aorta and from mechanical or chemical irritation of the ventricular wall or visceral pericardium.

There must of necessity be some fundamental relationship between the pain of angina pectoris and sudden death. Almost half a century ago MacWilliam<sup>13</sup> first suggested that sudden death in heart disease was due to fibrillation of the ventricles. He had observed experimentally that sudden death always followed the onset of this rhythm. Resnik<sup>14</sup> demonstrated the fact that this type of rhythm frequently occurred in dogs when subjected to breathing mixtures of low oxygen pressure. Other observers<sup>15 16</sup> have shown the frequency of ventricular fibrillation and its forerunner, ventricular tachycardia, in sudden death from ligation of the coronary arteries. The difficulty of obtaining electrocardiographic tracings at the very moment of death, particularly when that death is without warning, is obvious, but Robinson and Herman<sup>17</sup> have shown electrocardiographically the frequency of ventricular tachycardia in coronary thrombosis. Thus the weight of evidence points strongly to the supposition that sudden death of cardiac origin is nearly always caused by ventricular fibrillation and that this rhy-



thm is likely to occur under conditions which interfere with an adequate oxygen supply to the myocardium. Not infrequently sudden death occurs in heart disease in which there has been no pain, but it is almost always present in those individuals who have aortitis, coronary disease, or aortic insufficiency, lesions that are associated with a diminished oxygen supply to the heart.

Thus the chain of evidence has been more or less completely filled that paroxysmal heart pain of the type described by Heberden is caused by myocardial anoxemia. This has been done by showing the constant association of pathological lesions which cause anoxemia in cases of angina pectoris; by showing the relationship of angina pectoris to coronary occlusion; by making the significant analogy between myocardial and skeletal muscle pain under similar conditions of exercise and deprivation of blood supply, and by explaining the method of sudden death in individuals who have lesions which cause a lack of sufficient blood supply to the heart to keep pace with the oxygen demands of the heart.

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## CYSTS OF THE BREAST\*

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TULSA

About fifty per cent of the women during their menstrual life have periods of painful or sensitive breasts, usually associated with menstrual flow. This may vary from a slight uncomfortable tingling sensation to very painful, swollen, tender breasts. Usually it is transitory, but may later on develop into a true cystic condition. As the condition progresses and more hyperplasia is produced, more and larger cysts are destined to occur. The true cystic breasts usually occur in women approaching menopause, due, not necessarily to menopause, but because it is a slowly progressing disease.

Cysts of the breast is a fairly common condition and only a small percentage of those afflicted present themselves to their doctor for treatment. The term "chronic cystic mastitis" has been used in the past to cover roughly all cystic states of the breast. It now seems to be crumbling before the onslaught of recent research. Ewing<sup>1</sup> classified chronic mastitis under three subheads: (a) interstitial, (b) glandular, (c) senile. Sir Lenthal Cheate and Dr. Max Cutler<sup>2</sup> draw a sharp distinction between "mazophasia," a term which they use to designate a process of desquamative epithelial hyperplasia of the mastic ducts and mastitis. Whitehouse<sup>3</sup> questioned such a distinction and prefers to group all these

\*The above case was reported at the Staff Meeting of the Morningside Hospital, Tulsa, Oklahoma, March 5, 1934.

cystic states under the name of "mastopathia". It is true that mastitis is not correct nomenclature; lymphocytes may, though seldom, predominate about the acini, but of course this does not prove that it is inflammatory.

Acinic cystipherous desquamating epithelial hyperplasia, though a terrible unweildly expression, is the most descriptive expressioin yet invented to describe histologically, the glandular type of mastitis. The interstitial type as evidenced by the section of the case here reported, and other sections which I have examined, are due to the round cell infiltration and connective tissue surrounding the ducts and acini, causing a choking off of the ducts.

*Treatment:* Dr. Max Cutler<sup>2</sup> pointed out that this condition, while often precancerous, is due to imbalance of the anterior pituitary secretion. He was one of the first to recommend the use of luetin free ovarian extract. His results, however, were not always satisfactory.

Whitehouse<sup>3</sup> used theelin, securing satisfactory results in 17 out of 20 cases.

Taylor<sup>4</sup>, at the Memorial Hospital in New York, reported a series of 102 cases treated by one of five methods, as follows: (1) observation alone; (2) operation (all the operations were on pelvic organs); (3) non-operative gynecological therapy; (4) irradiation of the ovaries, and (5) by administration of ovarian substance. He reported a 30 per cent cure (31 out of 102 cases). His best results were obtained by irradiation of the ovaries in which he obtained eight cures out of thirteen treated.

The following case presents some unusual features and the treatment was gratifying from the standpoint of relief and yet quite different from any of those recently reported, that it is of passing interest:

Mrs. L. W. A., age 38 housewife; resident, Arkansas. First seen 10-25-33.

*Chief Complaint:* Painful breasts that are rapidly enlarging.

*Present Illness:* First noticed one year ago, gradual onset with increasing severity. Six months ago first noticed pain on elevating arms with pains radiating to shoulder. Began in right breast and some months later developed in both breasts.

In August, 1933, was examined at clinic in Toronto, Canada. Biopsy of breast made and was told that no malignancy

existed. From description of treatment as given by patient, evidently radium implants were inserted in right breast. Patient also given glandular extract, presumably ovarian. Has been taking this for two months.

*Past History:* Married at 16. One child 10 years old.

*Menstrual History:* Normal in every way.

*Former Operations:* Perineal repair and laparotomy for "adhesions". Does not think any organs or tissues were removed. Date, 1927.

*Previous Diseases and Illnesses:* None.

*Physical Examination:* Height 66½, normal weight 167½. Blood pressure 132 systolic and 70 diastolic, pulse 80, temperature 98. Robust, healthy appearing woman. Examination of breasts shows large, rather pendulous breasts. On outer upper right quadrant of right breast is felt a rather large mass, irregular in outline and firm to pressure. Skin is not adherent nor nipple retracted nor any nippular secretion. The left breast presents same picture except the mass in left is much smaller and ill defined. No definite axillary glands found, but patient pointed out definite tender spots in axillas. Transillumination confirms findings. Heart and lungs normal. Abdomen normal except rather broad supra-pubic surgical scar. Vaginal examination shows well repaired perineum. Cervix rather firm, normal in size. Uterus small in size, slightly retroverted. Left ovary and a mass, biscuit size, is firmly fixed in left fossa, probably to broad ligament. Right ovary not felt, and no mass in right side. Patient is overweight about 30 pounds. The circumference of either breast is 18 inches.

Both breasts were x-raved, showing diffuse cysts throughout each.

*Laboratory Findings:* Urine normal throughout. Blood test: White blood count 7,200; polymorph 56%; Wassermann negative.

My patient was put on thyro-ovarian medication using the entertic coated tablets.

Patient returned February 5, 1934. Both breasts had increased so that each breast was two inches more in circumference than previous examination. The tenderness and pain was so great that she had very little rest; sleep was extremely



difficult. No basal metabolic rate had been made.

The question of treatment was discussed. The patient objected to sterilization of the ovaries by x-ray. On account of the previous history of pelvic trouble it was not considered advisable to use x-ray treatment. The thought of doing an exploratory laparotomy on the pelvis and removing any existing mass was considered inadvisable as this patient was demanding quick and sure relief and we could not assure her that any pelvic operation would cure her. It must be remembered that this condition is often precancerous and that the breasts were rapidly enlarging in size.

On February 6 both breasts were amputated. Simple mastectomy with plastic flaps. It was the patient's desire to preserve so far as possible the nipples and some semblance of a breast. For this reason an incision was made, starting at the lower, inner quadrant, curving upward to the margin of the nipple, then looping over the top of the nipple and then carrying the incision across the other half of the breast in a symmetrical fashion. The breasts were then amputated. The lower skin flap was then brought upward and a wide margin of the upper flap cut away.

This carried the nipple up towards its normal position and did away with a long upper flap.

The patient made an uneventful recovery and left the hospital on the sixth post operative day. The patient has been free from pain and volunteered the information that the first night's rest that she had had in months were the nights immediately following the operation.

Pathological findings showed the specimens consisted of portions of two amputated breasts, which contained hard indurated tissue one-half size of hens egg on either side. Each of these areas contains cysts with much surrounding fibrous tissue. The areas are not definitely incapsulated. Microscopic examination: stained sections through the indurated masses reveal the presence of glandular acini and ducts, which are fairly normal, but which are surrounded by much connective tissue. There is present an infiltration of small round cells. Essentially the same is found of both breasts.

Diagnosis: Chronic interstitial mastitis.

812 Medical Arts Building.

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## ACUTE PELVIC INFECTIONS\*

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CUSHING

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Pelvic infections have been the determining factor for social and domestic unhappiness in countless thousands of women.

While there has been volumes written about this subject, it occupies a vital part in the every-day practice of both the general practitioner and surgeon. I believe that professional opinion is mainly in accord with the problems of pelvic infections and the variations which do exist, pertain largely to the surgical management. Therefore, nothing original can be given to you but I hope to focus your attention on a review of established facts, with certain beliefs and impressions which

have been acquired from my private practice for the past twenty-five years.

Since eighty per cent of acute pelvic infections are the result of that antique bug, "the gonococcus," and a large proportion of the major surgery done pertains to the relief of this condition. I will give a brief history of it and dwell along this phase of the subject. The reason I say antique, I believe the disease existed among the Greeks and Romans. You will find in the fifteenth chapter of Leviticus where the Israelites had careful instructions how to avoid contagion from urethral discharge. In 1857 Bernutz and Gonpil published a treatise on the relationship of gonorrhea to pelvic peritonitis and salpingitis. In 1872-76 Emil Noeggeroth contributed to

\*Read before Section on Surgery, Annual Meeting, Tulsa, May, 1934.

the subject. In 1879 Neisser discovered the gonococcus.

#### PATHOLOGY

The disease comes in contact: First, with the meatus, infecting the urethra and skene's glands which lie just within the meatus. Bartholins glands on both sides are frequently involved. The vagina being lined with squamous epithelium is somewhat immune. The cervix is next involved. It is red, swollen, erosive, throwing off an exudate of thick purulent discharge that has a characteristic odor. The germ now travels through the cervix (canal) into the uterus, extending up the walls to the cornu, out into the tubes. This invasion is different from the pyogenic organism. In post partum pelvic infections they pass laterally through the birth canal into the blood and lymph channels. It escapes through the ostium of the tubes, the pelvic peritoneum and external surface of the ovaries become involved. General peritonitis is rare but we have in all cases of gonorrheal salpingitis a pelvic peritonitis. The involvement of the pelvic organs, resulting in tissue destruction, is variable. Often a simple swelling of the tubes non-palpable is all that occurs. We are taught that when pus forms in the tubes we find a sausage-like tumor. This has not been borne out in my experience. We more often find a tubo-ovarian mass, fixed and wedged downward in the cul-desac and more or less globular in conformity. Free pus (abscess) may form in the cul-desac and anterior to the ligaments. The uterus may be swollen and the seat of acute metritis. Retroversion and retroflexion is a good point to consider in inflammatory pelvic disease, since the disease is usually confined to the posterior half of the pelvis. The adhesions may pull the uterus backward. The uterus may become adherent to the bowel and adnexa in the position of retroversion. The adjacent abdominal organs, namely, sigmoid, coils of ileum and omentum, may be adhered to the pelvic organs, sealing off the general peritoneum. The appendix is often involved by contiguity and often is adherent to the tube or ovary. We will not consider here the extension of the disease to the extra pelvic organs, such as cystitis, pyelitis and gonorrheal rheumatism.

#### SYMPTOMATOLOGY

The onset is usually very acute, with continuous pain over lower abdomen; may be lateral but generally it is distributed

throughout the pelvis. Fever 102-104, pulse usually corresponds in elevation. Gastro-intestinal symptoms usually absent although we sometimes have nausea and vomiting. The lower abdomen is very tender on palpation, generally more marked over one side. There should be considerable vaginal (leukorrhea) discharge and frequent desire to empty the bladder and dysuria but I have noticed in a number of cases the absence of these symptoms in the acute stage. These acute attacks are often flare-ups of a long standing chronic case. We usually get the history of frequent micturition, persistent vaginal discharge and vaginal and pelvic soreness. Sometimes the symptoms are so mild that the patient may have not recognized it. I have noticed the little difficulty patients have with bowel action. Seems when there is so much inflammation and perhaps adhesions of sigmoid, there would be more pain. Vaginal examination is instructive but I have found it uncommon to find the usual signs we are taught to look for are absent in acute pelvic involvement, namely, urethritis and the protruding swollen meatus, red swollen mucus surface with the usual discharge. These are absent in a majority of the cases I have had. This leads us to believe that the acute infection of the lower genital tract dates far back of the involvement of the pelvis. The acute secondary salpingitis is apt to be more severe and more destructive than the primary attack. Due to the fact that the preceding chronic process has been causing slow damage to the pelvic organs, which become permanently dislocated and distorted by adhesions. Thus a tube, ovary, or bowel that has become adherent may cause such damage, especially an intestinal adhesion that may cause a mixed infection in the pelvic inflammatory process. This adds more danger of a peritonitis and a greater tendency to the formation of large abscess than in the first type. The symptoms and course of the secondary acute salpingitis are very similar to those in a fresh case. There is usually, in the secondary form, a history of similar attacks of a pelvic inflammation. Bimanual examination is of very little help, although the cervix is usually tender and uterus fixed, abdominal muscles rigid and tender. Hard to satisfactorily map out, perhaps present masses, until acute symptoms subside. Rectal examination should be done in all cases, keeping in mind the



uterus and cervix feel much larger than when examined through the vagina.

#### DIFFERENTIAL DIAGNOSIS

1. *Acute Appendicitis* would be the most important differential diagnosis. The appendix is part of the gastro-intestinal system, so you would have a disturbance of function of this system. Pain, intermittent in character, usually begins in the epigastric region. Pain is near McBurney's point. Rigidity right rectus-muscle. Both recti-muscles rigid and pain lower in pelvic trouble.

2. *Ectopic Pregnancy* is more apt to be confused with subacute or chronic forms of salpingitis than with acute. On ectopic pregnancy the period is a little late; sudden onset of pain. The period comes on and remains as a constant irregular flow, not just normal. If rupture occurs, may have signs of abdominal inflammation but the fever is low. The picture of hemorrhage is present. Feeling fainty is a valuable sign.

3. *Torsion of Ovarian Cyst* if seen late may be mistaken for uni-lateral tubo-ovarian abscess, due to gangrene. Mass may be fixed as in inflammatory disease. The temperature may be high, main differential points should be the previous evidence of a tumor. The cystic character and smoothness of the mass, the very sick appearance, rapid pulse, and the absence of history and symptoms of genital tract infection.

#### TREATMENT

Acute pelvic infections should be treated conservatively in its early stages. I have never seen a pelvic peritonitis become general, so don't pay much attention to position; complete rest, mental and physical; morphine if needed for pain; hot vaginal douches and flax seed poultice is valuable in relieving pain. Rectal enemas, rather than physics. All other supportive measures with which you are familiar. I have used the protein therapy in many cases with apparently good results. Some surgeons operate early, remove or drain the tubes. Personally, I prefer waiting if possible until acute stages are over. The disease becomes limited, the pus has become sterile. You can be more conservative in the saving of important organs. I have seen many tubo-ovarian masses disappear and pregnancy occur later.

Briefly will give a few indications for operation:

1. Operate after the acute stages, when

induration tubo-ovarian masses, pain and soreness persist.

2. Operate all chronic recurrent cases.

3. Operate all free pelvic abscesses.

4. Operate all cases, even in the fever stage, that have recurrent attacks, never getting well between attacks, where there is invalidism and life is threatened.

5. Operate in the fever stage when the diagnosis is uncertain between that of appendicitis, rupture, ectopic pregnancy and torsion of ovarian cyst. If a favorable time can be chosen, it is with falling leukocyte count, temperature and acute symptoms. Operate after the temperature has remained normal one week and does not come up after pelvic examination.

#### DISCUSSION

*Dr. Manning:* I should like to ask Dr. Kuhn to discuss this paper.

*Dr. Kuhn:* I am just a little fearful it won't do for me to get started on this subject. In the first place, you were going to talk on acute pelvic infections and then you rambled on until you got some that are very chronic. I have been handling acute salpingitis for a long time. I am quite certain I see and handle a hundred cases a year. I have been teaching gynecology for a long time, and I start my lectures on acute gonorrheal salpingitis to these students with this remark: That one hundred per cent are curable without operation, or someone has made a most terrible mistake. All acute gonorrheal salpingitis cases, if seen early and handled correctly, are curable without operation, or someone has made a mistake. I could talk from now until the cows come home on that one subject, but I will not elaborate. I will say, furthermore, that the management of acute gonorrheal salpingitis is to my mind one of the simplest problems in surgery. That may sound like rather a broad statement. I have never found in my private practice with my patient in the home but few instances where I didn't have one hundred per cent cooperation on the part of the patient, and that one hundred per cent is the thing that means one hundred per cent cures. I want to discuss just this in especial on the treatment the doctor has indicated. I never under any circumstances permit a douche in gonorrhea. I prohibit it on my first meeting with the patient and if I ever find that they have been taking douches that means they have dismissed me, and I make it so clear in the beginning that either

they dismiss me before they begin or they stick. I think immeasurable damage can be done in any case, even in the male, by that form of treatment. Second, where acute salpingitis is present I think that it is not possible to make a serious mistake in diagnosis. Isn't that an awfully broad statement, and haven't I made some awfully broad statements, but I think that is true. As to the differentiation between that and acute appendicitis, if you have been called early enough and if you have been careful in your history, appendicitis is definitely a gastro-intestinal disease and the symptoms of appendicitis begin as such, with gastro-intestinal symptoms. You are more likely to be called later in appendicitis than you are in acute salpingitis, so your history will be very easily obtained. There are rare instances where there is a concurrence of the two

diseases at approximately the same time, and in this particular occurrence the infecting organisms are of course different. I have seen two such cases in my service in the last seven years. These, I will admit, are very puzzling cases.

I think I will ask if someone else has something to say. There are just a few of the old guard left. I do want to thank you for sitting through finally until the end. I feel that I have been rather signally honored by getting together and having offered to me such an enormous group of very fine papers. I wish to say with very little exception that the papers we have heard on surgery in this meeting have been papers of the very highest type. Some of them showed an enormous amount of study, and they will certainly make an interesting study in our State Journal.

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## HEADACHES, BACKACHES, DUE TO MALPOSITIONS OF THE UTERUS AND DYSFUNCTIONS OF THE OVARIES\*

LEALON E. LAMB, M.D.  
CLINTON

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Headaches and backaches in women who enter a surgeon's or especially a practitioner's office are one of the largest group of sufferers contended with; one that is less scientifically gone into and one for which the cause is less scientifically gone into and one for which the cause is least often found because of the fact that the medical profession take the attitude that women, especially those who have had one or more children, are normally supposed to have these symptoms the remainder of their lives, or that the cases are far too much trouble and have too much work attached to finding the cause. In other words, most physicians and surgeons had rather give the patient a few aspirin tablets hoping that she will never have a return of the symptoms, or that she will consult some other doctor the next time.

These patients are chronic sufferers, never knowing what it is to have a day of feeling absolutely well, and if you—her

physician or surgeon—give her relief she will never finish singing your praises to the public.

The subject of headaches and backaches caused by and from malpositions of the uterus and dysfunction of the ovaries is a broad one, and one to arouse much thought and consideration in both the surgical and medical field. I have gotten my subject matter and have written this paper almost entirely from personal observation, examinations and treatment of women classed in the above category.

Headaches and backaches both, or either, are the chief complaints, or important among the chief complaints, registered by, I should judge, 33-1/3% of all the female patients between the ages of 18 to 50 years, who enter a diagnostician's office or examining room and, of course, in the women who have given birth to one or more babies, the per cent is stepped up to from 35-1/3 to 80%; in other words, the ratio is relative to the number of chil-

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\*Read before Section on Surgery, Annual Meeting, Tulsa, May, 1934.



dren born and to the care of the mother during parturition. In these cases a very thorough history must be gotten as to the relation of their symptoms and organic or functional disturbances prior to and after childbirth, and in other words a good differential diagnosis.

The most common causes of headache are, especially: (1) constipation; (2) eye strain; (3) hypertension—high blood pressure with or without nephritis; (4) nephritis with or without high blood pressure; (5) nervousness, which is hereditary thyroid, emotional or some other of the less common causes; (6) infection from pyelitis, tonsillitis, caries, sinusitis, etc.; (7) migraine; (8) female trouble which can be due to old lacerations or relaxations from childbirth, or from a dysfunction of the ovaries, i. e., a hyposecretion of the ovaries. Thus a good history, physical, laboratory examination, plus an eye examination by a specialist will rule out constipation, eye strain, nephritis, high blood pressure, nervousness, from thyroid or hereditary, nervousness and headache, emotion and infection. This leaves us with a headache which, if not caused by one of the remote causes such as brain tumor, a meningeal irritation of some nature, etc., is the direct result of a female disorder which comes from an abnormal condition surrounding the uterus and its attachments, or the ovaries themselves, or both. In other words, if this patient has old lacerations or a uterus badly out of position, a surgical intervention is by far the most successful and immediate procedure of relief; if the pathology in the anatomy of the uterus and its attachments is not acute enough to cause the symptoms, then the diagnosis by a process of elimination is brought to a hyposecretion and dysfunction of the ovaries. (The treatment of these genital disorders will be discussed later in this paper.) These cases almost invariably give a history of menstrual disturbance, either irregularity or dysmenorrhea; backache, a symptom in this phase, particularly if associated with headache, is practically pathognomonic of a genital disturbance, but which reasonably enough must be differentially diagnosed. By laboratory procedure and physical examinations, a kidney infection or a nephritic kidney destruction, must be ruled out; also a myositis from focal infection, traumatic injuries to the spinal column and anatomical malformations must be considered.

If these and the other remote causes

of backache be considered and ruled out, then we must necessarily associate this symptom along with headache as described before to a disturbance of the genitals. These cases who have both the headache and backache are usually only relieved by surgery. A thorough pelvic examination will disclose a uterus more or less acutely out of position and often with one or several lacerations of the cervix, with an endo-cervicitis and endometritis of varying degrees.

#### TREATMENT

The treatment of headaches and backaches coming from anatomical pathology of the uterus and its attachments, such as mentioned before, i. e., lacerations, relaxations and malpositions of the uterus, is purely surgical and the technic in relieving these conditions is slightly different with every surgeon, but the idea followed out is essentially the same.

The treatment of the cases who have by elimination been classed as those attributed to a hypo-ovarianism is one that must be treated medically, but of course cases presenting a surgical condition of the genitals and with a suspected hypo-ovarianism; the surgical aspect of the case must necessarily be taken care of first in order to conscientiously diagnose a combination of the two. If surgery is resorted to and still the symptoms remain, then one must necessarily resort to the medical treatment.

To give you the medical treatment of these cases purely ovarian in cause, I am going to give you three brief case reports and what was done for them:

#### CASE NO. 1

Mrs. H.: Age 42, stenographer. Laboratory and physical negative.

P. H.: Past illness essentially negative as to present illness. Menstrual periods began at age of 14; regular, with but little pain; moderate flow of about six days' duration.

P. I.: Began 19 years after child was born. At that time, 1915, she began having mild headaches before, during or after her menstruation that have gradually and progressively grown worse up to the present date of treatment. The headaches have been so severe for the past year or more that as a last resort opiates in moderately large doses have been resorted to for relief, and complete relief was not had then under two to four days.

About twelve years ago this patient de-

veloped symptoms of a beginning exophthalmic goitre which gradually became worse until she consulted a physician who treated her with iodides, intravenously and orally. She was treated in this manner periodically for about nine years (refusing operation all the while) until her thyroid symptoms disappeared, except a slight exophthalmus which remains even at the present date. (Dr. R. M. Howard saw this patient about nine weeks ago and after complete examination, including blood pressure readings and a metabolism test, declared her not suffering at present from goitre; in other words, the blood pressure and metabolic rate were within the limits of normal.)

This patient has been given 2 cc. of the extract from the interior pituitary body every other day for the past seven weeks and her headaches and extreme nervousness have disappeared. (Is this temporary or permanent, or will she of necessity require more of the same treatment or periodic treatment until she reaches the menopause?)

#### CASE NO. 2

Miss C.: School teacher, age 26. Laboratory and physical essentially negative.

P. H.: This patient's past history is essentially negative as to present illness. Patient began menstrual cycle at age 16 with severe cramps three or four days preceding start of flow. This condition remained through four years at which time she finished enough of her education to become a grade school teacher.

P. I.: After teaching a few months she became extremely nervous and in addition to her dysmenorrhea she developed severe sick headaches, usually during the three or four days prior to her menstruation starting. These headaches and cramps remained until the first semester of school, the fall of 1933, when she began a series of 1 cc. anterior pituitrin hypodermically every other day for three weeks, during which the headaches and cramps subsided and finally stopped. She considered herself cured and did not report for further treatment. This patient remained apparently cured of her symptoms until about six weeks ago when she reappeared with the complaint that slight symptoms of headache and dysmenorrhea were returning. She requested further treatment and since that time has had 1 cc. of anterior pituitrin hypodermically three times weekly, one day intervening between treatments and has again gotten complete re-

lief. (Whether or not this treatment is permanent, is problematical.)

#### CASE NO. 3

Fay Cook: Age 16. Menses started at age 15, being regular one or two months then would miss one or two months; no pain; sick about six or seven days, with nose bleed every period she missed. Her weight was 92 lbs. She had eleven 1 cc. shots of anterior pituitrin every other day and gained to 103 lbs., making a total gain of twelve pounds.

Gentlemen, in conclusion, let me state that my sole and primary reason for having chosen this subject is its tremendous prevalence and the fact that so little is being done for its relief.

#### DISCUSSION—By *Dr. Osborne*:

I think that probably after Dr. Lamb is as old as I am he will think of other causes of some of these headaches and backaches. It is a complicated subject, undoubtedly, and he has put a lot of thought on it. I am not convinced that very many headaches or backaches are due to malpositions of the uterus. One of the most trying things in my experience is to have a patient come into the office and say that she has been told that her uterus is out of place. I usually tell them that the tongue can assume a different position in the month, too, and that the uterus is a movable organ. If it is not bound down by adhesions it very seldom causes any trouble. A careful examination of these patients who complain of backache often reveals that the patient is also suffering from hemorrhoids or enlarged veins of the broad ligaments, or endocervicitis, or something that will require attention before they will get any relief. That will be the surgery that will be required to correct the backache. Cystitis is a very common cause of backache. But I am not convinced that many of them are due to malpositions unless there are adhesions. As to hypo-ovarian function, I will say that we don't know so very much about that. We do know that the thyroid even is stimulated by the ovarian action and in some cases the stimulation of the ovarian function will cause a little increase in the thyroid action and you get some relief, but I have also seen cases where if you give them an extra large dose of this Antuitrin S they will howl with headache from the time you give it until they come in again and it is better not to repeat it. I don't know of any other of these organic preparations that pro-



duce a headache quicker than Antuitrin S if given in too large a dose. I don't give over five minims at a dose. There are so many causes of backache. A mere backache doesn't mean much more than what women complain of as "stomach ache" sometimes. They consider everything their stomach from the chin to the knees, and it is about the same way with backache. I say that women that are worn out and tired from household duties and family responsibilities will complain of pain between the shoulder blades. Their backache is high up and altogether different from the sacroiliac pains, and a good rest will help them out. In these times of depression I think the backaches and headaches will exceed the 33-1/3% the doctor mentions, and I have seen some of them when they recuperate their finances, their headaches and backaches will disappear. I believe that is all I have to say.

*Dr. Pierre N. Charbonnet:* I would like

to make just a very few brief remarks. It has been my impression that the majority of my patients with backaches are cured by the orthopedic surgeon rather than myself. I think only a small percentage are caused from malpositions of the uterus or ovarian dysfunction. The best therapeutic test I know of is the fitting of a properly holding pessary. If that practically relieves them we know the uterus is the cause of the trouble. If it does not we must look elsewhere for the cause. On the other hand, I have found a large percentage of women particularly who have gone through childbirth have relaxation of the sacroiliac joint. They may be having trouble with the arches of the feet. The orthopedic surgeon can cure more of them than I can. As for the hypovarian function, I think we are more or less in the dark on that subject until we can devise tests for the hypo- and hyperovarian function, as they are so very much alike.

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## BACTERIOPHAGE AND PERITONITIS\*

RAYMOND G. JACOBS, M.D.

ENID

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Much has been done in educating the laity about the delay in hospitalization and misuse of laxatives in abdominal pain, yet the death rate in general, except in certain communities, has not greatly decreased. Intensive education on a national basis will diminish the number of gangrenous perforated appendices with all its complications, but will never entirely remove the disease. We will always have it with us. Consequently it behooves us to increase our efficiency in the treatment of this condition.

Dr. Hollis Allen of St. Louis conceived the idea of pouring a solution of B coli bacteriophage into the abdomen of these cases of peritonitis at the time of operation. He supplied the bacteriophage made in his laboratory and it was used in cases operated for peritonitis from perforated appendices. The City Hospital appeared to be the best place to try this because of the two similar emergency surgical units,

active and alternating every other twenty-four hours and each with a resident surgeon of equal training and ability. Therefore, one surgical unit used the prepared bacteriophage in all its cases of peritonitis and the cases of the other unit acted as controls, receiving regular surgical treatment without the phage. The first five months the B coli bacteriophage in use had been prepared by Dr. Allen, and during the second five months a mixed phage supplied by a pharmaceutical company was substituted.

First, I shall make a comparable report of the interesting findings as they were recorded in the histories, and finally, the results of the two types of treatment of the cases of peritonitis.

The average age with and without the phage was 25 and 26 years, respectively. The oldest patient was 72 years and the youngest 5 years. The group treated with the phage consisted of 32 men and 17 wom-

\*Read before Section on Surgery, Annual Meeting, Tulsa, May 1934.

en. The men predominated in the control group by 39 and 9, respectively.

In both groups more than two-thirds were nauseated and vomited and over one-half had taken a cathartic before admission. About one-third of the cases made no remarks concerning purgatives. Salts and Ex-lax were the most popular therapy. The average length of the illness before admission was 2.8 and 3.9 days for the group with and without the phage.

The temperature and pulse rate was 100.6 and 100, respectively, for both groups. The white count for the group with the phage was 16,000, just 1,000 more than the control group cases. The extreme counts were 32,000 and 7,000 in these cases of peritonitis.

A physical finding that was found to be rather indicative of peritonitis was pain and tenderness over the involved area following sudden release of pressure by the palpating hand. This rebound tenderness was present in 60 of the 97 cases; only one was reported as negative. The remaining 36 were not examined for rebound tenderness.

Spinal anesthesia was employed in about 75% in the phage group and in about 50% in the control group. The former had two deaths and the latter five deaths. Ethylene and ether were equally used with one death for each group. Drop ether was used for six and two cases with two and one deaths, respectively. There were no deaths from the use of nitrous oxide, being only used in one case for each group. The deaths were not due to any influence of the anesthesia, as could be ascertained from the death certificate diagnosis.

The right rectus muscle splitting and McBurney incisions were used forty-four and five times with two and three deaths each, respectively, in the phage group. In the control group the right rectus, McBurney and midline incisions were performed in 31, 16 and 1 case, respectively. All the deaths occurred in the right rectus incision.

The notations concerning the discharge following operation was not entirely clear. All the cases, with a few exceptions, had a profuse, foul discharge by the third post-operative day. A great many were reported as foul on the first day. The cases with the phage during the first three months gave the impression of not being so foul, but observation later did not positively

confirm this. Certainly they became very purulent and odorous.

This report consists of 97 cases of which 49 were given the bacteriophage and 48 were treated without. This group includes only those cases in which a diagnosis of gangrene, perforation or peritonitis or abscess was made from the gross specimen. All of the wall had to be gangrenous in at least one-third of the area to be included. The group treated with the phage had 11 gangrenous, 22 perforated and 16 perforated appendices with abscess. The control group consisted of 9 gangrenous, 22 perforated and 17 perforated appendices with abscess. As to location, there were 15 and 10 retrocaecal appendices, respectively. *B. coli* was the most frequent report from cultures taken at the time of operation.

The appendix was completely removed with only one or two exceptions in each group. The infected stump was ligated and cauterized with phenol, alcohol and no attempt made at inversion. Adequate rubber drains were suitably placed, the gauze abdominal pack removed and the vial of bacteriophage poured in at the site of pathology and the incision partially closed. The average operative time for all cases of both groups was 35 minutes.

For the ten-month period there were 5 deaths in the 49 cases treated with the bacteriophage, having a mortality rate of 10%; the remaining 44 cases were discharged in good condition, having had a hospitalization of 20 days. The hospital days for those that died was 14. The two extremes in hospital days were 57 and 1.

The control group had 7 deaths out of 48 cases with a mortality rate of 14.5%. The remaining 41 were in the hospital over a period of 22 days. Those that died were in for 17 days. The longest and shortest hospitalization was 46 and 5 days. The causes of death were peritonitis, multiple abscesses, obstruction and septicemia. One of the phage cases had apparently recovered from her appendiceal abscess, but died from dementia and C.N.S. Lesions. The complications of the cases that recovered were one with peritonitis, two with post-operative pneumonia, one with phlebitis and one patient was pregnant. They all had peritonitis.

The first five months the bacteriophage used was prepared in Dr. Allen's laboratory and was a *B. coli* type and the mortality rate was four deaths in 29 cases, or 13.1%. The control group had four



deaths in 33 cases, or 12.1%. During the second five months a pharmaceutical mixed bacteriophage was substituted. It consisted of B coli, staphylococcus, streptococcus and pneumococcus proteins in solution. There was one death in 20 cases, giving a mortality of 5%. The control group had three deaths in 15 cases with a mortality of 20%,

A difference of only 4% in the death rate between the two groups over the entire ten months is not very impressive as to the value of bacteriophage. But then during the first five-month period a single strain B coli bacteriophage of unknown quality was used, having no advantage over those treated only by surgery, as shown above. During the second five months, using a phage of known quality, potency and proportion, as far as this can now be ascertained, there was one death in 20 cases of peritonitis.

Whether this proportion would have maintained itself over a longer period in several hundred or a thousand cases, we do not know. Certainly no harm was done by using the solution and from all indications it appears to be of value and worthy of further study.

#### DISCUSSION

*Dr. Kuhn:* This seems to be a move in the right direction. Some of us know what bacteriophage is, and no doubt we will be hearing more about it in the future.

*Dr. C. Hotz, Tulsa:* Dr. Jacobs presented a very interesting topic. He has done pioneer work in developing the treatment of ruptured appendix with bacteriophage. Appendicitis in the United States is on the increase. The mortality has been stepping up from year to year. There are still more than twenty thousand deaths per year in the United States from appendicitis. The mortality rate in ruptured appendicitis has probably dropped down a very small per cent. I think the American living habits, the diet and sedentary life, and catharsis have a great deal to do with ruptured appendix and always has done so. There was nothing added to the actual treatment of appendicitis in recent years until the development of bacteriophage. Recently the first colon bacillus, staphylococcus and streptococcus has been used and apparently with good results. There apparently has been a marked lowering of the mortality rate. I recently read a report of 29 cases in which bacteriophage was used with a mortality of 5%. We

don't know so very much yet about this particular method of treating appendicitis, and certainly a greater number of cases must be treated by this particular method before a definite conclusion can be drawn from it; however, I believe bacteriophage is the active principle which is lowering the mortality rate in these cases.

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#### CROSSED EYES MUST BE CORRECTED AT EARLY AGE

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The treatment for cross eye must be begun as soon as it is recognized. Parents who for one reason or another delay or postpone helping a child whose eye is turning crooked are guilty of inexcusable neglect, Dr. Hyman Cohen says in an article on "Structural Abnormalities of the Eyes," appearing in the December Hygeia.

Cross eye does not improve of itself as the child grows older; the tendency is for the condition to become worse. In some cases the eye may be straightened later, but its power of sight is gravely impaired.

Poverty is no excuse for delay. Eye clinics and competent specialists in all the larger centers of population provide free treatment and directions for continuing treatment at home.

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#### TREATMENT OF CHRONIC BRIGHT'S DISEASE

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James P. O'Hare, Boston (Journal A. M. A., November 3, 1934), in his discussion on the treatment of chronic interstitial nephritis, applies the term "chronic Bright's disease" to chronic glomerulonephritis, chronic vascular nephritis and chronic nephrosis. The most important form of treatment, without doubt, is a diet that aims at a proper balance between food intake, the ability of the kidneys to excrete end products, and the general needs of the body. He stresses the following points: 1. Chronic hypertensive nephritis is not a disease of the kidneys alone. Intelligent treatment demands an intelligent understanding of all the problems involved. 2. Overtreatment may be quite as harmful as undertreatment. 3. Chronic nephrosis is fully as great a nonrenal problem as chronic nephritis. Before thoroughly satisfactory treatment for this condition can be devised, much new knowledge must be forthcoming.

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#### CHRONIC BRUCELLOSIS

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Alice C. Evans, Washington, D. C. (Journal A. M. A., Sept. 1, 1934), summarizes the main facts relative to the incidence of chronic brucellosis as follows: 1. Contact with the casual organism is of common occurrence. 2. The severity of infection is known to vary from the acute disease to a form so mild that the subject is unaware of the illness. 3. Clinical diagnosis is extremely difficult, even in severe cases. 4. Brucella infection is known to occur in animals that appear to be healthy. 5. There exists in this country a common malady—the so-called neurasthenia—which in its clinical manifestations cannot always be distinguished from chronic brucellosis. These facts challenge the right of a physician to make a diagnosis of neurasthenia—a diagnosis regarded as dishonorable by the patient, and also by his family, his employer and his friends—without considering, among other possibilities, the possibility of chronic brucellosis.

# President's Page

LEROY LONG, M.D.  
Medical Arts Building  
OKLAHOMA CITY

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## MEN OF MEDICINE FAMOUS IN OTHER FIELDS

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It is safe to say that people engaged in any intellectual activity do not grow to their full intellectual stature without more or less serious excursions into fields outside of their own professions or callings. This is particularly true in connection with scientific pursuits, for there is a well recognized unity of knowledge so that one part of it has an important bearing on the other parts of it.

In the paragraph that I have just written, I speak of "scientific pursuits," and almost immediately I follow with a statement about the "unity of knowledge" in a way that would indicate that *science* and *knowledge* might be properly regarded as synonymous terms. Broadly speaking, that is exactly true, for what is science but "*knowledge* as of facts, laws and proximate causes, gained and verified by exact observations and correct thinking?"

So, then, the man of science—that is, the man who is anxious to acquire knowledge about facts and laws and proximate causes in his own profession—goes out, when he can, to gather information from ancillary and associated fields of knowledge. In doing that, he may be so intrigued by the beauties of the new field, or the problems of the new field; by the awakening of latent conceptions; by the overwhelming possibilities of this new place where he has never seriously worked before that he stays there and works. Men like these stay and work, and the world is blessed by such decision and determination, for some of these men have changed the course of human thinking and revolutionized the trend of human endeavor.

Nicolas Copernicus (1473-1543), being the protege of a prince-bishop, was assigned to a position in the church, after he had completed his preliminary education. In the year 1500, while delivering lectures on astronomy in Rome, he observed an eclipse of the moon. The next year he matriculated in medicine at Padua,

and, after his training there, practiced medicine. Up to 1512 he was the medical attendant of the prince-bishop, who happened to be his uncle. He practiced medicine, but, with an income of about \$2250 a year, he managed to construct and equip a tower which was called *Curia Copernicana*, in which he studied the stars.

Copernicus is known as an astronomer, and it is appropriate that he should be so known, because, even before the human intellect was freed from the thralldom of the Dark Ages, he conceived and proved and established the revolutionary heliocentric theory of the universe.

The name of Copernicus is immortal, and as we think of him it is interesting to try to visualize his connection with our profession while he practiced medicine in and about the castle of Heilsberg, in western Prussia.

Incidentally, it is interesting to recall that Copernicus, like Madam Curie and many another scientist of renown, was of Polish birth.

Sometimes men of medicine go out into other fields because of their love for knowledge in general, coupled with the new pleasure of an agreeable avocation. The man of medicine goes out into the activities of an avocation, but, anon, his work in the new field is so striking and so important that, in the minds of the uninitiated, the avocation obscures the vocation.

Oliver Wendell Holmes (1809-1894) was a great physician. For many years he was professor of anatomy at Harvard Medical School. That was a distinction. But even before that he had written the immortal paper about the contagiousness of puerperal fever. Throughout his long and honorable career he was a stalwart figure in medicine. And yet he is known to the public generally because of his avocation as a writer. *The Autocrat of the*



*Breakfast Table, The One-Hoss Shay, Elsie Venner* have endeared him to many thousands who do not even know that he was a member of the medical profession; yes, and they have placed him high among the literary celebrities of our country.

And then sometimes, in the cataclysmic experiences of life, a doctor of medicine may be so moved and swerved by the emotions that he leaves behind him his original vocation and takes to an unknown road where he is driven forward by new and compelling motives and forces.

Georges Clemenceau (1841-1929) began his career as a member of the medical profession, but it was not long until the unhappy condition of his country drew him into public life. I would not say that he was drawn into politics, as that term is generally understood, because he was never a partisan except for France—he was a statesman.

Bringing with him the characteristic and rugged honesty of his beloved Vendee—yes, and with it a bellicose ferocity, he stood like *The Tiger* that he was, against fraud and deceit and cowardice. Physician, Statesman, Prime Minister, Minister of War—in all these positions he served with an intenseness of purpose that commanded the admiration and plaudits of honest men. And who knows how much the independent and logical and human thinking of a humble member of the medical profession might have contributed to the stability of his life?

—O—

#### IS THERE SCARLET FEVER TOXOID?

George F. Dick and Gladys Henry Dick, Chicago (Journal A. M. A., November 3, 1934), present their experiments which were undertaken to learn whether the addition of formaldehyde to scarlet fever toxin results in the formation of a scarlet fever toxoid, nontoxic but capable of binding scarlet fever antitoxin and capable of stimulating the production of antitoxin when injected into susceptible persons. Their conclusions are: 1. Scarlet fever toxin is partially but not completely detoxified by treatment with solution of formaldehyde up to 1 per cent. The presence of unaltered toxin in the formalized preparation is sufficient to account for the immunity obtained. 2. No evidence now available justifies the assumption that there is a scarlet fever toxoid analogous to diphtheria toxoid. 3. Alum precipitates diphtheria toxin and the toxin may be demonstrated in the precipitate; but the redissolved alum precipitate from scarlet fever toxin showed no evidence of the presence of toxin. 4. The rabbit is not a suitable subject for standardization of scarlet fever toxin. 5. Since the detoxified portion of formalized scarlet fever is not antigenic, it is inferior to unmodified toxin as an immunizing agent because of the unnecessary amount of useless foreign protein which it contains.

#### NECROTIZING ULCERS COMPLICATING ERYSIPELAS

The bacteriologic study of Paul F. Stookey, Carl R. Ferris, Hubert M. Parker, Louis A. Scarpellino and Kim E. English, Kansas City, Mo. (Journal A. M. A., September 22, 1934), reveals that necrotizing ulcers, developing as a complication in the course of erysipelas, are due to a staphylococcus having dermonecrotic properties. The necrotizing factor is contained in a bacteria-free filtrate and is presumably an exotoxin. Administered intravenously, it is lethal to rabbits. The lethal dose varies over a wide range. It depends on the ability of the staphylococcus in question to manufacture toxin. In the experiments the most potent toxin produced death in five days subsequent to the intravenous administration of 0.4 cc. per kilogram of body weight. Larger doses of toxin produced death in as short a period of time as eleven hours. The postmortem examination did not show striking changes if death occurred after a few hours. If the dose of toxin was small, emaciation was marked whether the toxin was administered intravenously or cutaneously. Diarrhea was usually present. In rabbits dying several days later, microscopic evidence of toxic damage to the heart, liver and spleen was noted. Hemolysis in vitro of human blood on blood agar plates is not necessarily a measure of the ability of the staphylococcus to produce free toxin. The intracutaneous injection of 0.1 c. of this toxin will produce necrosis of a rabbit's skin in thirty-six hours. A culture medium containing dextrose inhibits toxin formation. Filtrates of streptococcus erysipellatis showed no dermonecrotic properties in the rabbit's skin and were inert when injected intravenously in doses of 3 cc. per kilogram of body weight. Filtrates from a nonhemolytic staphylococcus obtained from a furuncle showed no necrotizing properties although the organism produced yellow pigment. It is interesting to note that the staphylococcus is one of the group of organisms which Wright named serophytes because of their ability to grow freely in unaltered human serum.

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#### MULTIPLE SCLEROSIS: CERVICODORSAL SYMPATHECTOMY AS A RELIEF MEASURE

Frederick S. Wetherell, Syracuse, N. Y. (Journal A. M. A., May 26, 1934), presents a case in which there was a remarkable alleviation of symptoms following cervicodorsal sympathectomy. Four cases reported by Royle show improvement similar to that noted in the author's case. His oldest case shows improvement over a period of eighteen months. The possibility that a sudden remission took place in the five cases following the procedure outlined is extremely remote. Decreased vascularization has been shown to result in myelin degeneration of the type found in multiple sclerosis and can be explained on the basis of an asphyxia or anoxemia of the tissue in the neighborhood of the involved vessels. Royle has shown by animal experimentation on brains of living goats that there is an improvement in cerebral circulation following sympathetic trunk section. His observations relative to relief of venous congestion are interesting when considered in the light of Pfeiffer's studies, which show that the "perivascular free space" obtains part of its nourishment from the vein contained within it, and of Putnam's, that blocking of this venous supply produces acute lesions having a gross and microscopic resemblance to the lesion found in multiple sclerosis in man.

# THE JOURNAL

OF THE

## Oklahoma State Medical Association

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Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, 203 Ainsworth Building, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

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### EDITORIAL

#### PUBLIC POLICY AND LEGISLATION IN 1935

There has never been a time since Statehood when organized medicine in Oklahoma was in a more advantageous position to accomplish great good for the people of the state than this year, 1935.

We have come through the past four years with our "heads up" and our position well defined, notwithstanding the most serious opposition of the administration, this including the Board of Regents of the University. Even the Medical School has had to suffer from petty politics in dividing the administration of the University Hospital, thereby creating a spirit of unrest and uncertainty from

the staff to the janitor, but the members of the medical profession connected with the school have stood fast and brought the institution through with no loss in its scholastic classification and the University Hospital still maintains its standardization. Post-graduate medical teaching has been carried on by the State Medical Association after the Board of Regents passed a resolution opening these courses to the cults, making it impossible for organized medicine to go on with this important phase of medical education with the aid of the University.

So much for our troubles and accomplishments during the past four years. Now let us look forward to the possibilities of 1935, under a state administration headed by a man of sound reasoning, who has indicated that he will favor any measure that will protect the people of this state and forward an intelligent program in the prevention and treatment of disease.

The legislative committee of this association has been active for several months; they have given careful consideration to many proposed bills affecting the medical profession and the health and safety of our people.

The crippled children's law must be changed to meet present conditions; a basic science law will do much to eliminate the unprepared candidate to practice the healing art in any of its branches; the rescinding of the resolution by the Board of Regents opening post-graduate medical teaching to the cults; the appointment of a doctor of medicine on the Board of Regents of the University; the protection of doctors and hospital fees in cases of automobile accidents, and many other items of legislation and policy will be under consideration.

Now comes the important point of this editorial—every member of the Oklahoma State Medical Association must accept his individual responsibility and use his influence to bring about a proper solution of these problems. If each physician who does the family practice for a member of the legislature would let him know his attitude toward these important questions there would be no doubt as to the accomplishment of this entire program. This is very little to expect from the individual doctor and as the legislature will be in session when you read this, let me suggest that you contact your senator or repre-



sentative at once and let us take advantage of an intelligent administration to have enacted a set of intelligent laws, thereby promoting the health and happiness of the people for whom we are responsible.

Success or failure of the legislative program, as outlined by the association and under the direction of our committee on public policy and legislation, depends upon the doctors of the state putting forth some individual effort. The council has had two called meetings and after careful deliberation has approved the program and now appeals to *you* to do your part. It is your obligation to the profession which you represent, and to the general public that looks to you for guidance and advice in matters pertaining to the preservation of health.

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### PAYMENT OF DUES

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I hope you have just finished reading the above editorial, for I am sure that it will stimulate each member to promptly pay his annual dues; it will be plain to see that to carry out the above program it will be necessary to use some money. The legislature will convene this month (January) and consequently it will be necessary for us to have money available.

There is no State Medical Association in the Union that gives to its members more for the amount of dues paid than the members of our association receive. For \$4.00 each year we give subscription to the Journal, Medical Defense, all of the activities carried on by the various committees, such as assistance in matter of legislature and public policy, post-graduate medical teaching, constant contact with the officers of the American Medical Association, and all possible assistance to the component County Medical Society organizations.

It will be necessary for us to increase our membership this year to 1551 in order that we may retain three members in the House of Delegates of the American Medical Association. This will mean an increase of some fifteen members.

It should not be necessary for the Secretary of the component County Medical Societies to contact the individual members in order to collect the dues. You are doing the Secretary no particular favor by paying your dues promptly—you are simply helping yourself.

Let me admonish the new officers of

the component County Medical Societies to use every effort to increase their membership. Of course not at the expense of quality do we desire quantity, but there are many eligible doctors in the state and it will be your business to see that they become members of the state association.

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### LEST WE FORGET

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There is much discussion at this particular time relative to public policy and legislation, which, of course, is a very important phase of our professional existence, but by no means all-important. To sacrifice our professional ideals on the altar of political expediency would be a fatal error. Let us ever keep in mind the necessity of moral and intellectual advancement. We must not forget our obligation to use every effort to maintain a high standard of professional ethics and watch carefully lest we are led into a position where petty politics might dominate our organization to the detriment of our fulfillment of the high ideals which always have and always should predominate in the activities of this association.

Hold in respect the names of our great leaders who for the past thirty years have held high the torch of professional respectability. Let us think clearly and not lose our sense of values, lest we suffer an era of retrogression and forget the long cherished traditions of organized medicine.

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I wish to make favorable comment on the monthly issues of a publication by the Garfield, Oklahoma and Tulsa County Medical Societies. These issues have been coming to my desk for the past few months and it appears to me that they contain in every issue some valuable suggestions and very pertinent editorial comments. Such a publication keeps the members of the county societies informed as to the doings of the doctors in their respective society; besides, they call attention to the dates and programs of the meetings and in every way help to develop a most efficient organization for the doctors in the county.

Let me commend these three counties on their progressive movement.

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### LEGISLATIVE COMMITTEE ENDORSES PROTEST

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Whereas, a series of broadcasts under the title of DOCTORS, DOLLARS and

DISEASE is presented to the public every week by the Public Health Committee of the National Advisory Council on Radio Education, 60 East 42nd Street, New York; and

*Whereas*, these broadcasts either with or without the critical knowledge of the members of the Council are conducted by certain doctors and laymen who are in sympathy with and are now urging socialization in medicine, compulsory health insurance and state medicine;

*Therefore, Be It Resolved*, that the Chicago Medical Society indignantly protests against this insidious propaganda which is definitely hostile to the ideals, evolution and successful development of modern medicine; and

*Further, Be It Resolved*, that copies of this protest be sent to the members of the Advisory Council on Radio Education and to the secretaries of the various organized medical societies that they may register appropriately their disapproval.

The above resolution has received the hearty endorsement of the Legislative Committee of our Association and is published for the information of the membership. This endorsement will be forwarded to the Advisory Council on Radio Education.

—o—

### IMPORTANT TO THE DOCTOR

G. N. BILBY, M.D.  
Health Commissioner

In order that the medical profession, and others interested in preventing the dangerous and deadly disease, diphtheria, and that authoritative information on this disease from the State Health Department may be of record, the State Health Commissioner desires, through the columns of the State Medical Journal, to submit this article.

The commissioner wants the physicians of the state to know that he is in position to furnish toxoid to all physicians who desire to immunize against diphtheria. The physicians need only to write in, stating the amount needed and the toxoid will be mailed promptly.

The State Health Department is doing no immunization work at all, but in order to do its part, can make toxoid available to the physicians of the state who can do the work of immunizing. It is the desire of the commissioner that every effort be

exerted by the medical profession to protect the children of Oklahoma against diphtheria. It is within the power of the physicians to wipe out this scourge of childhood, and the health department stands ready to lend every assistance possible. It can do so by furnishing toxoid.

Although the work of immunization has been carried on extensively throughout the state for several years, it is necessary that doctors keep on the alert day and night. New babies are being born every day, and these babies must be protected.

Much has been done to protect the children of the state from this deadly disease—both by health education and immunization, but the task of preventing this disease is ever with us. It is a BIG task, and one that will never be finished. It is imperative that all children between the ages of six months and nine years of age be immunized.

DIPHTHERIA is a disease centuries old. It was well known to the ancient Greeks and recognized by them as a malady of great virulence. It continues to be a MENACE to our children. DIPHTHERIA MUST GO.

The Commissioner of Health desires to take this opportunity of expressing his appreciation for the splendid cooperation of the physicians of the state, as well as all other organizations who have at all times endeavored to promote the health of the people of Oklahoma. It is the sincere wish of the commissioner that the year nineteen hundred and thirty-five may bring to the physicians and health workers prosperity and happiness.

—o—

### Editorial Notes—Personal and General

DR. PHIL DEVANNEY, Sayre, is reported improved after suffering from injuries sustained in an automobile accident.

DR. and MRS. J. M. BYRUM, Shawnee, have returned from the Rio Grande Valley where they spent several weeks in December.

DR. T. H. McCARLEY, McAlester, was a guest of the Fort Smith Clinical Society in December. His subject was "Pneumonia in Childhood."

DR. E. RANKIN DENNY, Tulsa, has returned from Cincinnati where he spent two weeks taking a special course at the University School of Medicine.



## News of the County Medical Societies

OKMULGEE-OKFUSKEE County Medical Societies met December 17th, at Henryetta, for their annual meeting and election of officers for 1935. Dr. Ned R. Smith, Tulsa, spoke on "The Major Psychoses". Dr. E. Rankin Denny, Tulsa, spoke on "Passive Vascular Exercises in Peripheral Blood Vessel Diseases".

(New officers will be reported in the February issue of the Journal.)

LEFLORE County Medical Society held its regular annual meeting at Poteau, December 13th. The following program was presented:

"X-Ray Demonstration of Pathological Conditions of the Lungs"—F. P. Baker, Tahihina.

"Treatment of Lobar Pneumonia"—W. L. Shippey, Wister.

"Oedema and Treatment of the Failing Heart"—H. C. Forsey, Ft. Smith, Ark.

The following officers were elected for 1935:

W. M. Duff, Braden, President.

R. L. Wright, Poteau, Vice-President.

Harrell Hardy, Poteau, Secretary.

W. L. Shippey, Wister, Delegate to the State Convention.

WOODWARD County Medical Society met December 11th, and the following officers were elected for the new year:

D. W. Darwin, Woodward, President.

J. P. Davis, Shattuck, Vice-President.

C. W. Tedrowe, Woodward, Secretary-Treasurer.

T. T. Leachman, Woodward; Hardin Walker, Ross-ton, and E. F. Camp, Buffalo, Councilors.

JEFFERSON County Medical Society held their annual meeting in December with a banquet and elected the following officers for 1935:

C. M. Maupin, Waurika, President.

L. L. Wade, Ryan, Vice-President.

D. B. Collins, Waurika, Secretary.

W. M. Browning, Waurika, Delegate.

ALFALFA-WOODS County Medical Societies held their annual meeting for election of officers for 1935 and the following were elected:

Alfalfa County:

President—J. P. Bishop, Aline.

Vice-President—Z. J. Clark, Cherokee.

Secretary—L. T. Lancaster, Cherokee.

Woods County:

President—I. F. Stephenson, Alva.

Vice-President—C. A. Tracerse, Alva.

Secretary—O. E. Templin, Alva (re-elected).

Delegate—D. B. Ensor, Hopeton.

Thirty-six crippled children were examined at the meeting by Doctors John Day, Supply; W. K. West and Harry Wilkins, both of Oklahoma City.

CADDO County Medical Society elected the following officers for 1935 at their meeting held in December:

Otis A. Cook, Apache, President.

Fred Dinkler, Ft. Cobb, Vice-President.

P. H. Anderson, Anadarko, Secretary (re-elected).

A. L. Inman, Apache, Delegate to the state meeting.

Dr. L. E. Woods, Chickasha, read a paper on "Arterial Hypertension." Dr. Oscar Pyle, Chickasha, read a paper on "Urology".

TULSA County Medical Society elected the following officers for 1935 at their meeting in December, held in the assembly room of the Medical Arts building:

Dr. Walter S. Larrabee, President.

Dr. James Stevenson, Vice-President.

Dr. David V. Hudson, Secretary-Treasurer.

The following were elected as delegates to the state meeting: Doctors P. P. Nesbitt, George R. Osborne, A. W. Pigford, R. M. Shepard, Charles H. Haralson, Walter S. Larrabee, W. Albert Cook and Marvin D. Henley.

GARVIN County Medical Society elected the following officers for 1935 at their December meeting:

President—Dr. E. F. Taylor, Maysville.

Vice-President—Dr. R. M. Alexander, Paoli.

Secretary—Dr. John R. Callaway, Pauls Valley.

Censor—Dr. Chas. M. Pratt, Lindsey, succeeding Dr. L. P. Smith, Elmore City, who moved to Marlow.

WASHINGTON County Medical Society elected the following officers for 1935 at their meeting held in December:

President—Dr. J. G. Smith, Bartlesville.

Vice-President—Dr. J. E. Crawford, Bartlesville.

Secretary—Dr. J. V. Athey, Bartlesville.

Treasurer—Dr. O. I. Green, Bartlesville.

Censor—Dr. J. P. Vansant, Dewey.

Delegates—Drs. E. E. Beechwood and H. G. Crawford, both of Bartlesville.

Alternates—Drs. F. C. Rewerts, Bartlesville, and L. D. Hudson, Dewey.

These officers were installed January 8th at their annual banquet.

PITTSBURG County Medical Society met December 13th for their annual meeting and banquet, electing the following officers for 1935:

President—Dr. Floyd T. Bartheld.

Vice-President—Dr. B. B. Kies.

Secretary—Dr. L. C. Kuyrkendall (re-elected).

Censor—Dr. R. K. Pemberton.

Delegate—Dr. T. H. McCarley.

These officers all reside in McAlester.

THE SOUTHEASTERN SURGICAL CONGRESS, through its secretary, Dr. B. T. Heasley, announces the sixth annual assembly of the Congress which will be held in Jacksonville, Florida, March 11 12 and 13, 1935. The Congress has met previously in Atlanta, Birmingham and Nashville.

The states composing the Congress are: Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee and Virginia. A record attendance is anticipated at the Jacksonville meeting. Since March is the most desirable month to visit the land of flowers many surgeons will no doubt combine business and pleasure and attend this season of the year.

Some of the most distinguished surgeons in the country representing the different surgical specialties have been invited to appear on the program. A partial list of those who have already accepted places is as follows: Doctors Walter C. Alvarez, Perry Bromberg, Hugh Cabot, Willis C. Campbell, George W. Crile, John F. Erdmann, Paul Flothow, Ralph Green, Arthur Hertzler, C. Jeff Miller, Alton Ochsner, J. C. Patterson, J. Knox Simpson, J. W. Snyder and W. A. Weldon. More than twenty others will be listed when the program is completed. Look for the completed program which will be mailed about February 15, 1935.

For information address Dr. B. T. Beasley, Secretary-Treasurer, 1019 Doctors Building, Atlanta, Ga.

### DOCTOR FRANK HARRISON MCGREGOR

Dr. Frank H. McGregor, Councilor of the Second District of the Oklahoma State Medical Association, one of the leading surgeons of Western Oklahoma, and a distinguished soldier of the World war, met a tragic death near Bowie, Texas. Saturday, January 5, 1935.

Dr. McGregor was born at Temple, Texas, August 7, 1887, the son of Dr. Thomas Hiram McGregor, physician and Christian minister, and Lou (Wooten) McGregor. He received his common school education at Holland, Texas, graduating in medicine from the School of Medicine of the University of Louisville in 1913. Following graduation he continued his studies in New York Post Graduate Hospital, at the same time serving as house physician of the Bayonne Hospital at Bayonne, New Jersey.

He entered the World war as a First Lieutenant, August, 1917, and was one of a group of American surgeons to serve with the British, attached to the British Medical Corps in 1917, and served until March, 1918, with the same organization. During the Second Battle of the Marne Dr. McGregor performed valorous services which brought him the greatest honor within the power of the King of Great Britain to bestow upon the hero of another nation—the Military Cross, presented to him by King George V in an impressive ceremony at Buckingham Palace.

Dr. McGregor located at Mangum, November 1, 1915, and became associated with Dr. Fowler Border, a partnership that continued until the time of his death.

On November 15, 1920, he married Miss Mary Genevieve Tennery, who had just returned from serving her country as a member of the Army Nursing Corps. They have two sons, Frank Harrison, Jr., and Robert.

As a physician and surgeon Dr. McGregor was a recognized leader in his profession. At the time of his death he was a Councilor of the Oklahoma State Medical Association. He had been President of the Oklahoma State Hospital Association, member of the Board of Trustees of the Midwest Hospital Association, member of the Oklahoma State Board of Medical Examiners and was at the time of his death Department Surgeon of the American Legion. He held membership in the Greer County Medical Society, the Medical Association of the Southwest, the Southern Association of Railroad Surgeons, and the Association of Military Surgeons of the United States.

Dr. McGregor was a member of the Rotary Club, a 32nd degree Mason and a member of the India Temple Shrine.

The funeral services were held at the Municipal Auditorium at Mangum, Monday, January 7, 1935. The sermon was brief and filled with sincerity, and was delivered by E. A. McKim, minister of the Christian church, the church of which Dr. McGregor had been a lifelong member.

In the procession from the church to Riverside cemetery was a guard composed of Reserve

Officers which walked beside the hearse. While the body remained in state in the Auditorium in Mangum, members of the American Legion stood beside the casket as a guard of honor.

Colonel McGregor was dressed in the olive drab of the service to which he belonged and at his burial was given the military honors which he so justly deserved.

### DOCTOR JOHN ELLIS STANDIFER

Dr. J. E. Standifer, pioneer physician of Western Oklahoma, died December 23rd at Elk City. He was 68 years of age.

He was born at Eolian, Wise County, Texas, in 1886, moving to Elk City in 1907 from Cheyenne. He was associated with his son, Dr. O. C. Standifer, also of Elk City, operating the Standifer Hospital.

He is survived by his wife, one son and two daughters.

Masonic rites were conducted at the cemetery, with burial at Elk City.

### DOCTOR I. S. FREEMAN

Dr. I. S. Freeman, 49-year-old physician of Weatherford and Rocky, died December 27th after a short illness.

Dr. Freeman is survived by his widow, father and two sons. Burial was at Sentinel.

### SUBDURAL HEMORRHAGES

Timothy Leary, Boston (Journal A. M. A., September 22, 1934), observed, through a study of fifty cases of subdural hemorrhage, that in many of the cases the minor character of the traumatism that leads to a subdural hemorrhage is striking. Relatively trivial blows or falls on the head, which are suffered daily without harmful results by many persons and which have been experienced previously by victims of subdural hemorrhage without harmful effects, may be responsible for a hemorrhage at a critical moment. Indeed, falls without injury to the head have been apparently efficient in producing the lesion. The relation of alcoholism to the condition is close. In the present series, 54 per cent of the victims were addicted to alcohol. In a larger clinical series, alcoholic addiction was reported in 40 per cent. The higher mortality rate in persons addicted to alcohol is probably responsible for the difference in this respect. The source of the hemorrhage in cases unaccompanied by fracture of the skull is usually a ruptured bridging vein or an arachnoidal vein. The hemorrhage tends to be unilateral. The inability of the relatively avascular dura to organize the subdural clot efficiently and resulting repeated secondary hemorrhages are responsible for the chronicity of many cases. Inflammatory reactions in connection with repairing lesions are incidental or accidental. The only practical method of cure of the condition is by operative intervention.



# ABSTRACTS « REVIEWS « COMMENTS AND CORRESPONDENCE

## EYE, EAR, NOSE and THROAT

Edited by Marvin D. Henley, M.D.  
911 Medical Arts Bldg., Tulsa

**Incidence and Significance of Sinusitis in Pneumonia.**  
Edward H. Campbell, M.D., Philadelphia. *Archives of Otolaryngology*, November, 1934.

The literature does not give any statistics on the association of sinusitis with pneumonia, but it is common knowledge that sinusitis does many times accompany otitis media, mastoiditis, the exanthematous diseases and pneumonia. One hundred thirty patients with lobar and bronchopneumonia were examined over a period of the past two years. The age was from three weeks to ninety years. The routine method of examination was: (1) Gross inspection of the nose, noting the congestion of the nasal mucous membrane, the engorgement of the turbinates, the amount of the irregularity of the septum and the character of the secretions; (2) the application of cocaine solution to the mucous membrane, especially over the lower turbinate and the under surface of the middle turbinate; (3) introduction of the nasopharyngoscope and inspection of the location of the pus in the nose; (4) examination of the ear drum and character of the discharge, if any; (5) the examination of the throat with special reference to postnasal secretions; (6) roentgen examination of the sinuses in a few selected cases. The results showed that all the patients with lobar and bronchopneumonia also had an acute sinusitis.

The essayist relies more on the nasopharyngoscope than anything else for the diagnosis and in the doubtful cases does a roentgenogram. In one hundred twenty of the one hundred thirty patients the diagnosis was made by means of the nasopharyngoscope. He uses a hand-suction rubber bulb for a preliminary cleansing of the nares before proceeding with the examination.

He believes that the infection of the sinuses is an etiological factor in the incidence of pneumonia. Eight of the patients in this series were positively known to have a purulent discharge from the nose when the lungs were normal and then later developed pneumonia. He says that when the great prevalence of sinusitis is considered it appears that pneumonia develops in only a small percentage of such cases, but that that percentage is sufficiently high, however, to warrant consideration of such infections of the sinus as possible sources of pneumonia and to demand energetic treatment of such sources as a prophylactic measure.

The records of the series showed that there was a bilateral acute purulent otitis media in seventy-nine patients, or 60.7 per cent, a one-sided acute purulent otitis media in twelve, or 9.2 per cent, an acute catarrhal otitis media in fourteen, or 10 per cent, and no involvement of the ears in eighteen, or 13.8 per cent; in five cases the ears were not examined. Twelve of the patients were operated on for mastoiditis.

He has a chart which gives the age of the patient, what the nasopharyngoscope showed, what the clinical examination of the lungs showed and the diag-

nosis and a roentgenologic report on the chest and sinuses. The majority of the patients were children.

**Sphenoid Sinus.** Frederick T. Hill, M.D., Waterville, Me. *Archives of Otolaryngology*, September, 1934.

A recapitulation of post operative observations following operations on the ethmosphenoid sinuses is the text of this article. There is a discussion given as to the best method of approach in such operations, the external approach or the intranasal operation. Many factors enter into this question, chief among which is the hesitancy of the average operator to do any more than is absolutely necessary and the preference of most patients to the intranasal operation. The intranasal operation and the external approach are aptly likened in scope to the simple and the radical antrum operation. There is no doubt that the external approach makes a thorough exenteration of the ethmoid cells more possible and according to Lynch complete removal of the anterior wall of the sphenoid and evisceration of the lining are possible only with the external approach.

An answer is sought to the question of why does the opening into the sphenoidal sinus made at operation tend to close, even after a complete removal of the anterior wall, including the pars ethmoidalis. The result cannot be wholly a question of technic since the essayist has had the opportunity of viewing cases which have been operated on by some of the recognized leaders of the profession. Tobey's review of one hundred operated sinuses in which the post operative result was unsatisfactory in fifty per cent of the cases, is mentioned. The post operative treatment with silver nitrate, trichloroacetic acid, caustics, roentgen therapy, electrocoagulation, etc., attempting to do what should have been done at the time of operation, has been uniformly unsuccessful. Goldsmith suggests that the mucous membrane resents the traumatization incident to the operative interference and tends to restore the original plan of nature by closing the opening. Since it is almost impossible to remove all the mucous membrane and to leave the bony edges of the removed walls smooth and clean, it can easily be seen that this helps in the contracture of the enlarged opening. When the sinus itself is comparatively large in size the opening is not so apt to close.

Allergy also plays a part in this contracture of the operative opening. Allergic patients, who have been operated, have a greater tendency for the opening to close. With the operative opening contracted or closed the same factors cause a recurring sinusitis and the only remedy is a reoperation which will provide adequate ventilation and drainage. In allergic patients their manifestations of allergy many times disappear after reopening the sinus. Correlation of the history, physical findings and signs and symptoms is important because the sphenoid sinus has frequently been found to be an etiological factor in allergy. The essayist feels that surgical measures are advisable only when definite indications, independent of the allergy, are present in the sinuses themselves and that the external operation seems definitely indicated in allergic cases in which, after a careful study, operation on the ethmosphenoid sinuses appears warranted.

Microphotographs of marked lymphocytic infiltra-

tion about numerous glands, lymph nodes and ciliated epithelium from the reformed anterior sphenoidal wall accompany the article.

**Etiologic Diagnosis of Conjunctivitis.** Phillips Thygeson, M.D., Iowa City. *Archives of Ophthalmology*, November, 1934.

The treatment of conjunctivitis is greatly simplified when the character of the infecting organism is definitely established. The importance of an early accurate diagnosis is stressed so that the proper therapeutic measures may be promptly instituted and the correct prognostic possibilities evaluated. The essayist has evolved a film and culture technic for the organisms whose most common habitat is the conjunctiva. This is applicable to the busy ophthalmologist in private practice with a limited amount of time as well as for use in a clinic. The technic is given in detail. Charts for differentiation by culture and by morphology of the common conjunctival bacteria are shown.

Under special considerations are mentioned some diagnostic points in lacrimal conjunctivitis, vernal catarrh, inclusion conjunctivitis, inclusion conjunctivitis of the new-born (inclusion blennorrhea), adult inclusion conjunctivitis (swimming pool conjunctivitis), trachoma and inclusion bodies. Under trachoma he speaks briefly of the difficulty of finding inclusion bodies and free bodies. A means to aid the differential diagnosis between trachoma and follicular conjunctivitis is given. The therapeutic agents that the essayist has found to be most efficacious in acute conjunctivitis, pseudomembranous conjunctivitis and chronic conjunctivitis are given. He advocates the teaching of ophthalmic bacteriology in every graduate course of ophthalmology. Three hundred consecutive cases were studied as described by the essayist in the ophthalmologic clinic of the University Hospital, Iowa City, and in ninety-one per cent of the acute conjunctivitis, eighty-five per cent of the subacute conjunctivitis and forty-six per cent of the chronic conjunctivitis, the etiologic agent was determined.

Dr. Edward Jackson of Denver in his discussion of this paper brings out an interesting point. He says that in his thirty years of practice in Denver he has seen only three cases of infection from Koch-Weeks bacillus and that these were clearly contracted elsewhere at a low altitude. He is of the opinion that there are large regions in this country where acute contagious conjunctivitis does not occur.

Dr. Frederick H. Verhoeff of Boston in his discussion of this paper criticizes the title since he says it indicates that this communication deals with all forms of conjunctivitis and with all the factors concerned in their causation, whereas, in fact, it deals only with some of the common forms of conjunctivitis and, as regards etiology only with microbial agents. In the paper and the discussion the use of optochin or zinc sulphate in pneumococcal conjunctivitis is debated.

**Lipoma of the Larynx—Intrinsic in Origin.** Herbert S. Birkett, Montreal. *The Journal of Laryngology and Otology*, November, 1934.

World-wide reference from forty-three sources is an outstanding feature of this report on a very rare tumor, an intrinsic lipoma of the larynx. Beautifully colored sketches illustrate the removal of the tumor as well as the condition of the vocal cords before and after the operation. The literature shows only forty-two lipomas of the larynx of extrinsic origin and only four of intrinsic origin formerly reported.

Chevalier Jackson in forty years has observed seven cases, one of which was of intrinsic origin. His cases varied in age from nine years to eighty-three years, which agrees with other recognized leaders in this particular speciality. The epiglottitis, the aryepiglottic folds and the base of the tongue are the sites where the growths most persistently originate. Their formation and development is a cause of much controversy. They usually occur somewhere in the body where fat cells are already present. They arise also in the submucosa of the gut, lung and pleura. They may arise from fibrous connective tissue which is not highly differentiated and which recognizes many possibilities. There is a thin reticular fibrous connective tissue immediately beneath the mucosa of the larynx and this theory satisfactorily explains the presence of the tumors in this region.

If, at operation, the removal is incomplete it will recur. The two methods of approach for removal of the tumor are by the laryngo-fissure and direct laryngoscopy. If it is intrinsic in origin the laryngo-fissure affords the best site for its removal. If it is extrinsic in origin and has a pedicle then it is most easily dealt with by means of a snare and direct laryngoscopy.

Pathology of lipoma of the larynx shows it to be a benign histoid tumor. It is composed of fatty tissue, which never becomes malignant, never metastasizes and proves fatal only by its bulk interfering with normal physiological activity. They vary from a bean to a large plum in size and are yellow or reddish-yellow in color. In consistency they are soft to fairly firm and as a rule are elastic on pressure. Microscopically they are made up of fat cells.

The case reported is that of a man who was operated in 1921 and in 1933 was still in good health. He had a huskiness and cough which came on after his return from the great war. He gave a history of having been gassed during the war in 1917, otherwise the past history was negative as were the physical findings with the exception of the larynx. About three years after the first symptoms appeared he came under the observation of Dr. Birkett. About four weeks previous to this an attempt had been made elsewhere to puncture a "swelling in the throat" during the course of which a needle was broken off and the distal part not recovered. Eight months of the previous three years had been spent in a tubercular sanatorium. Under general anaesthetic a tracheotomy was done and the skin and subcutaneous tissue retracted in anticipation of entering the larynx. This however was not necessary as the tumor readily presented itself. It was removed with the broken needle which was found in the body of the tumor.

The fact is deplored by the author that the bibliography which accompanies many papers is not always accurate.

### INTERNAL MEDICINE

Edited by L. J. Moorman, M.D., 1200 N. Walker, Oklahoma City; C. E. Bradley, M.D., Medical Arts Building, Tulsa; Hugh Jeter, M.D., 1200 N. Walker, Oklahoma City

By C. E. BRADLEY, M.D.

**Subacute Peribronchilar Pneumonia.** Herbert S. Reichle, M.D., and Alan R. Morita, M.D., Cleveland American Journal of Diseases of Children, Vol. 48, No. 5, November, 1934, pgs. 1001-1014.

The authors present a form of respiratory disease, which their observations in the last five years have led them to believe is a definite entity which occurs



frequently in the United States even though a review of the literature would suggest that it occurred only on the continent and particularly in Germany. Their diagnoses were confirmed at autopsy.

Subacute peribronchilar pneumonia is a disease of infants which exhibits a persistent cough which is productive, paroxysmal and extremely debilitating; an absolute increase in lung volume due to generalized emphysema; fine rales, sometimes diffuse and other times localized or migratory; inspiratory retractions of the epigastrium, intercostal spaces and suprasternal notch; a history of a progressive respiratory ailment of at least four weeks' duration, associated with cough, cyanosis, pallor and dyspnea.

The fourteen patients studied were all under two years of age and developed symptoms before they were a year old. At the height of the disease the patient is tense, alert, and apprehensive—trying to ward off every exertion which might bring on the dreaded cough. Cyanosis; deficient weight; deformed chest, Harrison groove, barrel shape with persistent vertebral retraction of the xyphoid processes; severe emphysema which obscures cardiac and hepatic dullness and, because of the descent of the diaphragm, displaces the liver; long and labored breath sounds which may be very faint; fleeting rales; and a mucopurulent secretion in the throat which impedes respiration are other characteristic symptoms of the disease. There is no characteristic temperature curve; a normal or slightly elevated temperature is present at intervals and a subnormal temperature usually precedes death.

The postmortem examination shows that peribronchial and peribronchilar pneumonia is an essential feature of the disease; however, the diffuse pneumonias demonstrable in physical examinations occur late and are usually the precursors of death. Sinusitis and otitis media, parenteral dyspepsia, edema which does not seem to be caused by disease of the kidney are common complications. There was no vascular collapse or cardiac decompensation.

The prognosis is poor; twelve children died after an illness of from one to eighteen months. The white blood count is not characteristic since it ranges from 10,000-20,000 per c. mm.; usually with a predominance of polymorphonuclear leucocytes; occasionally there may be a lymphocytic response as occurs in other acute infections.

The roentgram may show no changes other than those indicative of emphysema.

An extensive pathological examination of the eight autopsies performed showed subacute and chronic bronchitis, peribronchilar pneumonia, bronchiolectasis and emphysema. The bronchitis was obstructive because of mucosal swelling and intrabronchilar exudate or to the origination of intrabronchilar exudate with consequent obliteration. During the more acute phase of the inflammation in a given bronchiole the process was destructive and exudative, with especially severe damage to the musculoelastic elements of the walls of small air passages and resulting ectasis. In the later stages of the inflammation the process was productive with the resulting peribronchilar induration. Concomitant with the obstruction of air passages, peripheral distention, emphysema and atelectasis developed. The relative proportions of emphysema and atelectasis appeared to depend on the completeness and duration of the bronchilar obstruction. Emphysema, however, was characteristically dominant.

The characteristic history of repeated and continuous respiratory infections, the irritating, productive, and exhausting cough, the signs of bronchilar obstruction and the generalized nature of the lesion

form a syndrome which should not be mistaken for common bronchopneumonia. Chronic pneumonia in young infants may confuse the observer, but the characteristic paroxysmal cough or purulent secretion in the throat are absent. Foreign bodies may produce diffuse bronchial disease, but the symptoms are usually limited to one side of the thorax and they do not usually occur in the first year of life. Bronchiolitis fibrinosa, another rare disease, may be recognized by the typical casts which are expectorated by the patient. There have been a few cases of acute generalized bronchiolectasis with bullous emphysema reported in the literature, but the rapid onset and course of the disease differentiate it from the syndrome which the authors describe. A more serious problem in the differential diagnosis of subacute peribronchilar pneumonia is pertussis; however, the cough in pertussis becomes modified or may disappear after the onset of pneumonia.

The etiology of subacute peribronchilar pneumonia cannot be settled on the basis of our present information. The bacteriological studies of the pharyngeal and bronchial secretion during life and of the pulmonary tissue after death were inconclusive since many organisms of the common respiratory flora were present.

Subacute recurrent peribronchilar pneumonia is a pulmonary disease of infants which has a characteristic composite of signs and symptoms; and autopsies of eight of the twelve cases studied confirmed the clinical diagnosis. Little is known of the etiology of the disease but it is probably caused by an infection by common micro-organisms, which localized at a site that has mechanical disadvantages for an infant otherwise possessing considerable resistance.

**A Simplified Cough-Plate Method for the Early Diagnosis of Whooping Cough.** By Irving S. Barksdate, M.D., F.A.P.H.A., and Frank P. Simpson, Greenville, South Carolina. *Southern Medical Journal*, Vol. 27, No. 11, November, 1934, pgs. 943-45.

It has been shown that whooping cough is the greatest scourge of infancy and one of the greatest dangers of early childhood since it kills more children than measles, scarlet fever, and diphtheria together. It is estimated that it causes the death of 6,000 children in the United States every year; most of these are under five years of age.

Because it is such a menace and because crude methods of diagnosis made it possible for many children to be exposed before diagnosis was made, the authors have carefully studied a series of cough-plates in an effort to discover a rapid method of identifying the causative organism, the bacillus of Bordet and Gengou.

The old methods of culturing the organisms and preparing media required a full day's work by a skilled technician. Moreover forty-eight hours was the shortest time in which even the slightest growth could be observed.

The authors present the following medium for the early identification of *B. pertussis*. They have omitted the glycerin of older media which possibly had an inhibitory effect on the growth of the bacillus:

#### I. Nutrient agar

H <sub>2</sub> O	1 liter
Beef extract	3 grams
(Adjust to pH 6.7)	
Peptone	5 grams
Agar	15 grams

#### 11. Three to four medium sized Irish potatoes are

cooked in a quart of water for one-half hour, filtered through cotton, and autoclaved.

Add 5 cc. of the potato extract to 10 cc. of the nutrient agar.

### Identification of the Bacilli

(1) *B. pertussis* grows slowly; *B. influenza* quickly.

(2) Diagnosis can often be made from the plates since by transmitted light the colonies are characteristic, being smooth, raised, glistening, pearly, and almost transparent.

(3) *B. pertussis* stains readily with 0.0001% Nile blue sulphate while *B. influenza* does not.

The plate is held six inches from the patient's mouth, and the child is allowed to cough directly into the media. The plate is placed in the incubator at 37.5 degrees centigrade for 24 hours, and then examined for characteristic colonies.

A typical colony is selected, emulsified in water on a clean glass slide, dried, fixed by flame, and stained with 1:5000 bismuth violet for three minutes. The smear is examined under the oil-immersion objective for deep purple, short, stubby bacilli ranging from 2.5-5 micra in length; the coccoid forms seem to be young organisms. After ten to twelve days the bacilli are rather slender rods.

Experimentation showed that five hours and forty-five minutes was the minimum time in which the bacilli would develop on the new media.

A microscopic agglutination test (1 drop of bacillus emulsion in water to 1 drop of agglutinating serum 1:400 (Sharpe & Dohme) shows agglutination in ten minutes if the bacillus is *B. pertussis*) was used to identify organisms when a smear was doubtful.

The children whose plates were positive had typical clinical whooping cough except in two cases. Diagnosis was possible in five days with the new simplified methods for the bacteriological identification of the *B. pertussis*—for the sputum was full of organisms in the pre-whooping period.

Forty-nine of the ninety cough-plates studied were positive of the Bordet-Gengou bacillus.

By HUGH JETER, M.D.

The Complete Treatment of Pernicious Anemia. Russell L. Haden, M.D., Cleveland, Ohio. *American Journal of Digestive Diseases and Nutrition*. Vol., I, P., 628, November, 1934.

In discussion of this subject the author reviews recent advances in the treatment and understanding of the disease. He refers to three phases, the gastrointestinal, the hematologic and the neurologic. He emphasizes the following: "The disease once established must be treated continuously and without interruption during the remainder of the patient's life," and gives this method of administration of therapy which he refers to as "specific": "I have adopted the plan of giving an intramuscular injection of a parenteral liver extract derived from 100 grams of liver daily for two weeks. After this period a similar injection is administered weekly for three months and then every two or four weeks as the individual patient requires. If the blood count is low at the beginning of treatment, the appetite is usually poor, so the patient is allowed to eat as he desires. Within a week after the beginning of treatment the patient is started on a special diet for anemia and is encouraged to eat liver every day. In less serious cases after improvement is well under way, the oral administration of liver or any potent liver substitute in adequate amounts may be substituted for the in-

tramuscular injections. The diet should be continued permanently. The amount of liver substance to be taken by mouth is determined on the basis of the blood and clinical findings. In any event, it is most valuable to give an intramuscular injection of liver extract once a month for an indefinite period of time in addition to the special diet and the oral therapy. If the patient has a predominant or well-defined neurologic lesion at the beginning of therapy, or shows signs of developing such a lesion more intensive therapy is instituted. After the preliminary fourteen-day period of daily injections, the eating of liver daily as part of the special anemia diet is insisted upon. After the first week of treatment a liver substitute is given by mouth also in adequate amounts each day. Vitamin B is also added to the diet as wheat germ, yeast or yeast extract."

It is especially interesting to note that he expects improvement of the neurological symptoms. He also, in his charts and discussion, fails to refer to the per cent of reticulocytes as a factor in the diagnosis or a guide in the treatment.

Relation of Anemia to Surgical Diseases of the Gall Bladder. Ralph A. Kordenat, M.D., Chicago, Illinois. *American Journal of Digestive Diseases and Nutrition*, Vol. I, P. 639, November, 1934.

In this, 116 patients who had undergone operations either for drainage or removal of the gall bladder, were studied:

Average erythrocyte count, fatal (3) cases 3,370,000  
Average erythrocytes count, female cases 4,115,000  
Average erythrocyte count, male cases 4,183,600

Of all cases, fourteen had over 5,000,000 erythrocytes; seventy, 4,000,000 to 5,000,000 erythrocytes; twenty-six, 3,000,000 to 4,000,000 erythrocytes; five, 2,000,000 to 3,000,000 erythrocytes.

Although specific relation between gall bladder disease and anemia is not shown, the author seems to imply that the anemias occur as a deficiency in blood forming organs, rather than the destruction of erythrocytes and that there is a relation between anemia and liver dysfunction.

Interesting charts and case reports are given.

## ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.  
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Dislocation of the Shoulder Accompanied by Fracture of the Greater Tuberosity and Complicated by Spinatus Tendon Injury. Paul W. Greeley and Paul B. Magnuson. *J. Am. Med. Ass'n*, CII, 1835, June 2, 1934.

In the experience of the authors, fracture of the greater tuberosity of the humerus, associated with dislocation of the shoulder, is relatively rare. In reviewing the large series of cases reported in the literature, this finding has been borne out.

Complicating this type of fracture dislocation of the shoulder is injury to one or both of the spinatus tendons. The symptoms are those of dislocation of the shoulder, with marked tenderness over the greater tuberosity, which is not found in simple dislocation. In the history, the patient will always mention a direct blow against the shoulder at the time of the injury.

The dislocation is reduced by the Kocher method,



which usually replaces the greater tuberosity. Open operation to replace the tuberosity is rarely ever necessary. Fixation in abduction and external rotation is the position of choice and is maintained for from three to four weeks. Physiotherapy is then instituted.

Treatment of the tendon injury is more complicated. In the case of a partial rupture, the position of abduction and external rotation promotes repair. In case of doubt, exploration of the tendons is justified. In the case of a complete rupture, the tendon should be anchored to the greater tuberosity or to the subscapularis tendon. Fixation in these cases should be maintained for six weeks; the arm should then be placed in a sling for several days and physiotherapy should be begun.

In cases in which the operation is done early perfectly useful joints result. Old cases, presenting muscle atrophy and tendon shortening, may result less favorably, with limitation of motion and pain.

Five cases are reported, one of which was treated by operation. Good results were obtained in all cases by following the treatment outlined above.

Post-Traumatic Para-Articular Ossification of the Knee Joint ("Kohler-Pellegrini-Stieda Shadow"). I. M. Odessky. *Radiology*, XXII, 701, June, 1934.

The nature of this shadow is not wholly clear and there is some question as to the underlying lesion. It occurs following an injury—inflicted by either direct or indirect violence—or a series of small, repeated injuries. Several observers have considered the underlying lesion to be a fracture—the separation of a bony lamella. Others believe it to be an ossification of periosteum separated by an injury. Pellegrini considered it a metaplasia of the connective tissue. Still others believe that this shadow is produced by lime salts deposited in a hematoma. Temler believes that the shadow corresponds with the intermuscular space between the vastus internus and the adductor magnus, that capillary hemorrhages into this space produce hematoma in a location where conditions for resorption are unfavorable, and that these hematoma subsequently calcify. Kulowski compares this disease to ossifying myositis.

The author discards the hypothesis of a lamellar fracture because of absence of the shadow immediately following the injury. Moreover, the outline of the femoral condyle shows no change. Also, the concomitant shadow shows a tendency to grow and to change in form, structure, and density. Furthermore, the shadow may diminish in size and even disappear.

Periosteal ossification would necessitate a connection of the shadow with the bone, which is usually not the case.

By means of technically irreproachable roentgenograms one can easily distinguish between the process of calcification and that of ossification. Study of the histological specimens argues against fractures and proliferation of the periosteum, and in favor of metaplasia of the tissues. The mechanism is identical with that of calcification in other tissues, such as the pleura, pericardium, pancreas, etc. Similar shadows are also found in other joints (leg, shoulder, elbow) which have been exposed to injury.

In the author's opinion, the so-called Kohler-Pellegrini-Stieda disease is nothing more than a calcification or ossification of the knee joint, showing no consistent uniformity in clinical history for such classification, but forming a part of the general conception of post-traumatic, para-articular ossification.

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
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The Treatment of Trichomonas Vaginitis With Sodium Perborate and Quinine. I. W. Kahn, M.D., New York. *American Journal of Obstetrics and Gynecology*, Vol 28, No. 4, Page 511.

This author is suggesting an additional method of treatment for this condition reporting his results in a series of 47 cases.

One of the factors of the method which he employs is the fact that it delegates nothing to the patient. He has had a uniformity of prompt relief and apparent permanency of end results as based upon repeated examinations after six, nine and twelve menstrual periods without evidence of leukorrhea, itching or positive microscopic smears.

Having established the diagnosis, he employs two quarts of a solution of two tablespoons of sodium perborate at a temperature of 100 degrees F. through an especially devised apparatus for washing out the vagina. He ascribes efficiency to the perborate solution because of the additional oxidation and he ascribes benefit from the special apparatus because it allows irrigation under pressure making possible the distention of the vagina and disappearance of crevices, wrinkles and pockets. He then wipes the vagina dry, blowing in quinine sulphate powder afterwards. Powder is also blown upon the external genitalia. The patient is treated daily for one week and every alternate day for the next week. No vaginal douches or suppositories are prescribed. Treatment is not interrupted by the menstrual period, although irrigations are not given during the flow. The amount of quinine blown into the vagina at each treatment is  $7\frac{1}{2}$  to 15 grains, usually mixed with starch or zinc oxide powder.

He then reports several typical cases so treated.

Comment: This is a very troublesome condition as far as complete cure is concerned. While much has been done to fill the literature with various methods, no entirely satisfactory scheme has yet been evolved, and it is well enough to give attention to all variations. It is notable that the basis of most methods lies first in thoroughly cleansing the vagina and drying it. The deviations of treatment after this point lie in the question of basing more hope upon drugs which will destroy the trichomona or upon means such as plain corn starch which will keep the vagina dry.

—Wendell Long.

Value of Friedman Test in Diagnosis of Intra-uterine and Extra-uterine Pregnancy. Morris A. Goldberger, M.D., Udall J. Salmon, M.D., and Robert T. Frank, M.D., New York. *Journal American Medical Association*, October 20, 1934, Vol. 103, No. 16, Page 1210.

These authors are reporting upon 1137 Friedman tests done at Mt. Sinai Hospital.

They record the results of a review of 4595 Friedman tests performed by 26 different clinical pathologists. In this review 5.1 per cent were false negatives and 0.95 per cent were false positives. In ectopic pregnancy 77.8 per cent were correct positives and 22.2 per cent were incorrect positives. The technique employed was the injection of 10 cc. of urine



into one rabbit and inspection of ovaries 48 hours later.

In the Mt. Sinai series reported, 20 cc. of morning urine was used in divided injections into each of two rabbits. Their results in 1093 intra-uterine pregnancies were 0.55 per cent false negatives and 0.09 per cent false positives. They attribute their greater success to variation in technic, especially in using two rabbits.

Their results in 44 ectopic pregnancies were 14 false negatives, that is, 32 per cent error. In this series the Friedman test was considered to be of value only when it was positive.

"The Friedman pregnancy test is a valuable laboratory aid in the diagnosis of pregnancy. Like other laboratory tests, however, it has its limitations. For the clinician, it is important to remember that a positive test means merely that the patient is excreting anterior pituitary-like hormone which is formed in response to the presence of viable chorion, that the positive test does not indicate whether the fetus is alive or dead, that the test will remain positive in missed and in incomplete abortions as long as viable chorion is attached to the uterine wall, and that a negative test does not exclude the presence of an ectopic pregnancy."

Their summary and conclusions give a concise picture of their experience with this test. They follow:

1. In 1,093 normal intra-uterine pregnancies the percentage of false positive Friedman tests was 0.09. The percentage of false negatives was 0.55.

2. This small percentage of error, as compared to other reports, is attributed to the fact that duplicate tests were performed.

3. At least 3.4 per cent of rabbits appear to be refractory to the Friedman test.

4. In ectopic pregnancy, the percentage of false positives in a series of forty-four cases was 32.

5. The high percentage of negative tests in ectopic pregnancies is accounted for by the presence in these cases of dead or degenerated villi.

6. In both intra-uterine and extra-uterine pregnancies the Friedman test is dependent on the visibility of the chorion.

7. In missed abortion the Friedman test may remain positive for as long as thirty days after death of the fetus.

8. In incomplete abortion the Friedman test may be positive.

9. The presence of a visible fetus can be determined by study of the female sex hormone of the blood.

10. In the diagnosis of ectopic gestation the Friedman test is of value only in cases in which it is positive.

11. If the test is negative in a case of suspected ectopic pregnancy, the clinical history and observations should determine the diagnosis.

Comment: This is an excellent report upon a series of Friedman tests. It graphically demonstrates that the clinician, in using any test, must be familiar with the underlying principle of the test and must appreciate its value in relation to the clinical problem at hand. It is needless to say that the Friedman test has been of tremendous assistance, especially when properly done and when properly interpreted.

—Wendell Long.

The Status of the Residual Tube Following Ectopic Pregnancy in Relation to Sterility and Further Pregnancy. Analysis of Ninety Cases Examined by Uterotubal Insufflation, I. C. Rubin, New York, N. Y. American Journal of Obstetrics and Gynecology, November, 1934, Page 698.

As the title signifies, Dr. Rubin gives an analysis of 90 patients who were operated on for tubal pregnancy. The study was undertaken primarily to ascertain whether or not it was possible to prognosticate the future obstetric fate of the patient, and also the therapeutic value of tubal insufflation in this group of secondarily sterile women.

He gives statistics collected by Schumann from various authors as to the prospects of another tubal pregnancy or normal intra-uterine pregnancy following operation for ectopic pregnancy. Schumann's figures showed that among 280 patients in whom pregnancy of any kind was possible following tubal pregnancy, 12.5 per cent had repeated ectopic gestation, while 47.8 per cent had intra-uterine pregnancy. He gives other figures which range from 3.5 per cent to 14.6 per cent as to incidence of repeated ectopic pregnancy in patients operated upon for tubal pregnancy.

Of the 90 cases included in this report, 23 or 23.5 per cent gave a history of pregnancy again after a previous ectopic gestation. Fourteen of these were intra-uterine and 8 or 34.8 per cent of those pregnant were again tubal.

The women who had a tubal gestation exhibited a slightly lower fertility than average women. This was in accordance with other published reports.

Only 33 out of the 90 patients reported had been pregnant previous to the tubal gestation, largely due to the fact that most came for relief of sterility.

Significant in the length of sterility preceding and following the tubal pregnancy is the fact that 52.05 per cent had been sterile three or more years previous to the tubal pregnancy and 72.97 per cent were sterile three or more years after the operation.

There is a rather large incidence of associated abnormalities in this group. For instance, menstrual abnormalities are frequently met. Also in this group, the tubal lumen is more commonly obstructed without palpable disease than in the general group of sterile women. In this group also, palpable changes in the adenexae recorded in 24 cases, uterine displacement in 11, and cervical disease in 11.

The type of operation employed was usually a single salpingectomy. However, 8 cases had bilateral tubal pregnancy, of course, necessitating bilateral salpingectomy. In spite of the presence of blood in the peritoneal cavity, 21 had appendectomy.

A consideration of the status of the residual tube as determined by insufflation is then discussed. When insufflation was performed soon after operation, the residual tube was usually found to be in better condition than when a longer interval had elapsed. Deducting the 8 patients with a history of bilateral salpingectomy and proven non-patency of the tubes, only 12.35% of the remaining had tubes that showed a normal patency. That is, less than a third of the incidence of normal tubes generally encountered in sterile women. "In as much as some degree of patency of the only tube was present in 46 patients the possibility of pregnancy was not excluded in 56.79 per cent."

The author discusses the relation between tubal patency and potential pregnancy as of prognostic value in "that the 23 patients who had another preg-

nancy after the first ectopic pregnancy had at least three times more normal tubes than the 67 patients who did not become pregnant again." He feels that the larger incidence of repeated ectopic pregnancy in his group is due to the fact that the patients came especially for relief of sterility.

The following study of the pressure records is of interest: "In studying the pressure records it was found that in general where they were high, i. e., above 150 mm. Hg on one or more tests, though some degree of patency was present, the succeeding pregnancy was apt to be another ectopic. On the other hand when the pressures were lower, more approximating from 100 to 110 mm. Hg, the future pregnancy was more likely to be intrauterine. When the pressures ranged between 120 and 150 mm. Hg, the patient was likely to develop an extrauterine or intrauterine gravidity."

Dr. Rubin then briefly discusses the therapeutic value of tubal insufflation following operation and attributes a therapeutic action ascribable to insufflation in five cases.

The author then discusses briefly localization of the site of obstruction by insufflation and also comparison of insufflation with the finding at laparotomy and lipiodol examination.

In the conclusions from this study, Dr. Rubin has outlined the following surgical rationale which suggests itself in the surgical treatment of ectopic pregnancy in nulliparous women:

(a) "When the patient's condition is serious, as little as possible should be done other than to insure the safety of the patient. The uninvolved tube should not be disturbed although it should always be inspected for the possibility of a coexistent tubal pregnancy. Inspection of the ovaries has similar importance. This rule applies to both parous and infertile women.

(b) "When the patient's condition is good, the uninvolved tube should be carefully scrutinized. If it is hopelessly diseased and the patient has borne a child, it should be removed. If only partially impaired, it should be left in situ because intrauterine pregnancy occurs more often under such conditions than tubal pregnancy. The mere possibility of a second ectopic pregnancy is not an indication for salpingectomy. In any event its pathologic status should be recorded as accurately as possible for the future.

(c) "Whenever possible, abnormal conditions should be corrected at operation. A salpingostomy or freeing of adhesions, or both, may be required. One of my patients, who bore a living child later, was thus treated. The age of the patient, her parity, and her desire to bear more children should influence and determine the procedure. In rare instances, a temporary ligation of the tube or some type of temporary sterilization is preferable to salpingectomy.

(d) "In cases of repeated ectopic pregnancy, when the patient is anxious to have a child and is willing to risk a third ectopic pregnancy, a partial salpingectomy may be performed with a plastic operation on the tube stump. The alternative of removing the gestation sac by simple incision and suture of the tube with or without curettement of the tube may be borne in mind. The feasibility and value of this procedure awaits future experience.

(e) "The early diagnosis of unruptured tubal gestation will make conservative operations on the pregnant and nonpregnant safer and more feasible."

Comment: Since this article has been abstracted in some detail, one can only recommend the policy of conservatism employed in the treatment of these cases

and look with some hope if not assurance upon the value of tubal insufflation in regard to prognosis and therapy following an ectopic pregnancy.

—Wendell Long.

A Report of 565 Vaginal Hysterectomies Performed for Benign Pelvic Disease. N. Sproat Heaney, Chicago, Illinois. *American Journal of Obstetrics and Gynecology*, November, 1934, Page 751.

In this report of 565 vaginal hysterectomies for benign disease there were two deaths, or a mortality rate of 0.35 per cent. Dr. Heaney is an enthusiast for this type of operation and it has been his choice for removal of the uterus "except in cases in which it seems impossible of completion because of fixation of the uterus or because of an unusually large tumor." For example, he has noted that large fibroids were removed piecemeal sixteen times in the last 110 cases of vaginal hysterectomy.

Tables are included to show the age incidence, the pathological conditions for which the operation was done and the associated physical complications.

He feels that great care should be exercised in pre-operative preparation with the best possible physical condition obtained so that operation may be as safe as possible. He then describes in considerable detail the technic which he employs and outlines the additional operative procedures, such as colpoperineorrhaphy, employed in this series.

After giving a brief summary of the two fatal cases he considers at some length the postoperative complications. There were 198 where the temperature was over 100.6 degrees for one or more days. Of these 32 were due to cystitis, 164 probably due to wound infection, one due to femoral thrombophlebitis and one due to parotitis.

There were four cases of postoperative hemorrhage. Of these one required laparotomy for ligation of a small aberrant artery. Of the three remaining, one patient required suture vaginally and transfusion. The other two were controlled by packing. All recovered.

In this series the bladder was entered three times, but on suture of the bladder and insertion of retention catheter the convalescence in no case was disturbed, and healing was complete in all three.

He then discusses the fear in the minds of those not familiar with the technic that the ureters frequently be ligated or injured. In this series there was no injury to the ureters. Dr. Heaney expresses the feeling that there is less danger of ureteral injury when operating vaginally than by the abdominal route.

There was one case in which an adenomyoma of the rectovaginal septum was removed and in so doing a tiny hole made in the rectum. This was immediately closed and the patient had an uncomplicated convalescence.

There were two cases in which the vaginal vault opened and allowed prolapse of a tube. In each case a ligature was placed about the mesosalpinx and the tube removed with a small cautery, without difficulty.

The author then calls attention to the smooth convalescence of patients after this type of operation, the absence of surgical shock, the reduced gastrointestinal disturbances and the quick recovery.

He then attributes the decline of vaginal hysterectomy as a procedure of choice to the over-emphasis placed upon the so-called chronic lesions of the ap-



pendix. He laments the fact that "now that these conditions have been evaluated and the harmlessness of most of these deviations has been established, a new race of gynecologists has been reared which has relatively little or no familiarity with the vaginal attack on lesions."

**Comment:** While Dr. Heaney is very enthusiastic about this operative procedure for the removal of the uterus and is quite apt to employ it in many more cases within a given group than would seem entirely wise in average hands, the striking features of this report are the low mortality rate and the relatively small number of complications. It must be remembered that the admirable features of this report are largely due to the skill and ability of this splendid gynecologist and it cannot be taken as an index of what will happen in the average hands, particularly those of the general surgeon who is not familiar with this approach.

There is certainly no question but that vaginal hysterectomy has a definite, though confined, field of application. Like other phases of our professional problems, over-enthusiasm and under-estimation both are to be condemned, but proper application is to be rewarded by more satisfactory results.

—Wendell Long.

**Postoperative Wound Complications.** By E. L. Eliason and Charles McLaughlin. *Annals of Surgery*, December, 1934, Page 1159.

Imperfect wounds are graded as type "A," "B," and "C". Type "A" represents serum collections or minor haematomata which do not delay convalescence or in any way interfere with the end-result of the patient's wound. Type "B" signifies the development of a definite wound infection which does not permanently interfere with the integrity of the wound or materially delay convalescence. Type "C" is reserved for cases of wound rupture or wound infection which impair the end results or lead to the death of the patient.

The occurrence of serum collections in clean wounds has presented a problem since the advent of modern surgery. These collections are considered to be the result of trauma to the subcutaneous tissue at operation, either from rough handling of the tissues, careless ligation of superficial vessels, rough use of retractors or undue tension exerted by stay or tension sutures. As would be expected, serum collections are especially prone to appear in incisions made through fat abdominal walls.

The imperfect wounds classified as type "B" form a much more important group. These cases develop frank wound infections but there is no permanent effect upon the wound, or material delay in the patient's period of hospitalization.

In the series of 9,155 general surgical procedures reviewed by these gentlemen, 351 imperfect wounds were observed, an incidence of 3.81 per cent. Type "A" wound complications were much more common, comprising 70.6 per cent of the entire group. Type "B" complications developed in 65 instances or 18.7 per cent of the series. Type "C" wounds, which includes the serious infections and cases of wound rupture, were encountered thirty-eight times, or 10.8 per cent of the group.

Their conclusions are as follows:

1. Reduction of the amount of cat gut under the subcutaneous tissue has been the most important factor in reducing the incidence of serum collection.

2. Contamination of the wound by infectious ma-

terial handled at operation is one of the most frequent causes of superficial wound infection.

3. Drainage of the superficial layers of all wounds in which soiled material is handled will materially reduce the incidence of type "B" infection.

4. "Wide open" drainage with adequate separation of the wound edges is the most logical and satisfactory method of handling a wound infection.

5. No effort should be made to close amputation stumps following infectious diabetic gangrene in which pre-tibial oedema, extending half way to the knee, is demonstrable.

6. A definitely stormy postoperative course usually precedes the development of a wound rupture. This was true in 88 per cent of the series of twenty-five cases in this group.

7. Wound disruption is usually observed between the fifth and eighth postoperative days. Eighty per cent of their series were diagnosed during this period.

8. The treatment of ruptured wounds with packing and adhesive straps is the safest method for the patient.

9. Peritonitis is the most common cause of death following wound disruption.

**Comment:** This is an excellent article which is well worth reading. In any surgical clinic wound complications occur from time to time to impede the postoperative course of the convalescent patient. As the authors say, fortunately, the majority of these complications are of minor importance, responding promptly to therapy. There is, however, a smaller group of patients who, following apparently clean surgical procedures, develop a postoperative wound complication of major importance, amounting almost to a catastrophe in certain instances. There are few surgeons of experience who cannot recall such examples in their own practice.

—LeRoy D. Long, M.D.

**Thyroid Disorders in Childhood.** By Richard B. Catell, M.D., Lahey Clinic, Boston, Massachusetts. *New England Journal of Medicine*, Volume 209, Page 867, November 2, 1933.

Disorders of the thyroid in children are not unusual. The following classification of them has been found to be satisfactory at the Lahey Clinic:

1. Developmental Disorders
  - a. Congenital absence of thyroid
  - b. Lingual thyroid
  - c. Aberrant thyroid
  - d. Thyroglossal cysts and sinuses
2. Cretinism
  - a. Congenital
  - b. Sporadic
  - c. Cachexia strumipriva
  - d. Hypothyroidism
3. Colloid or adolescent goiter (edemic goiter)
4. Hyperthyroidism
5. Inflammation
  - a. Acute
  - b. Chronic
6. Tumors
  - a. Adenoma
  - b. Aberrant thyroid
  - c. Carcinoma

Advice will be frequently sought of the physician regarding the presence or absence of colloid goiter and the treatment for it. Likewise, hyperthyroidism will not infrequently occur in childhood. The other



disorders mentioned in the chart are more rarely encountered and although sporadic, must be recognized and properly treated if these children are to develop normally.

### Colloid or Adolescent Goiter.

Colloid goiter is not uncommon in non-goiterous regions and is the rule where goiter is endemic. This is the most frequent disorder of the thyroid in children and it becomes necessary for every physician dealing with them to be able to give proper advice concerning it. It is important to know what change has taken place in the gland as well as the etiological factors contributing to its production. The colloid enlargement may be the response of the thyroid to increase physiological demands but seems definitely related to an iodine deficiency. In children of goiterous parents there seems to be in addition a predisposition to this form of thyroid enlargement. This colloid enlargement may occur at any time between two and twenty-two years of age but rarely during infancy. It is very common to find some enlargement in the anterior cervical region between the ages of eight and the time when menstruation becomes fully established. The diagnosis is not difficult although we find children who have been said to have colloid goiter in whom we are unable to demonstrate any enlargement of the thyroid. In young girls a transverse cervical fold of fat may simulate colloid goiter. Sometimes a prominent larynx in a thin neck is taken by mistake to be a colloid goiter. The prominent larynx causes a normal isthmus to appear enlarged. Measurements of the neck are of little value. The most important help in making the diagnosis is the method of palpation of the thyroid gland as described by Dr. Lahey (*Journal A. M. A.*, March 20, 1926). By this method when the head is turned to one side and the trachea pushed toward the same side it is possible to demonstrate the soft enlargement of both superior poles, the lateral lobes, and the isthmus.

The treatment of colloid or adolescent goiter should be conservative. The administration of small amounts of iodine as recommended by Marine and Kimball will, of course, prevent it. However, because of the infrequency of the condition in our schools (particularly here in Oklahoma) we do not believe that iodine administered as such is to be recommended as a general practice. A well balanced diet should provide sufficient iodine for a normal thyroid function. The iodization of both the water supply and table salt seems unnecessary. In the presence of colloid goiter it is sometimes felt advisable to give small amounts of iodine. This may be given weekly over a period of three months twice a year. It may be given as one drop of Lugol's Solution, or better in some more dilute form such as Iodostarine or as a solution of sodium or potassium iodide. Once a colloid goiter has developed it is impossible to predict in what patients the goiter will disappear. Some will disappear spontaneously, others will disappear without treatment after possible related stress is removed, while others remained unchanged in spite of any treatment. It seems best, as a general policy, to give small quantities of iodine and observe the patient every six months, but if the treatment "by neglect" is ever of value in thyroid disease it is in these patients and one is justified in giving no medication.

Rarely the colloid enlargement will continue and the thyroid will attain considerable size and surgical interference will be indicated either because of super-imposed hyperthyroidism, pressure or for cosmetic reasons.

It should be appreciated that when colloid goiter persists it is the first stage in the production of

endemic or adenomatous goiter. Usually after twenty years of age nodules appear made up of adenomatous areas with areas of hyperinvolution followed by degenerating changes so common in this form of goiter.

### Hyperthyroidism.

Primary hyperthyroidism or exophthalmic goiter is not uncommon in children, and in the Lahey Clinic previous to 1932 they had treated 45 children who were 15 years of age or less. It may occur at any age after two years. The youngest child seen there was two years and eleven months of age. In its clinical and pathological manifestations it is quite similar to the disease seen in adults. The diagnosis is usually easy if one thinks of the possibility of hyperthyroidism occurring in children. In cases where the diagnosis does not appear certain, they should be carefully watched with frequent examinations and without iodine medication. In patients in whom the diagnosis is obscure, iodine may mask the disease in causing temporary improvement. The basal metabolism test is not always reliable in children and cannot be depended upon to the same extent as in adults, because of technical difficulties in getting the child to breathe through the mouthpiece without leakage. Even so, in the absence of an elevated metabolism in these children it is not felt wise to make the diagnosis of hyperthyroidism.

With the diagnosis established all of these children should be operated upon. An operation correctly done will relieve the patient quickly and will permit the child to go on with normal development. There seems to be a rather widespread common feeling that they should not be operated upon because they are so young and because they might be carried along with medical treatment. If unoperated and treated medically with complete rest, small amounts of iodine and sedatives, the condition will not be cured. X-ray therapy should not be employed since it is too difficult to gauge with sufficient accuracy to get relief and not get hypothyroidism. It cannot be depended upon to the same extent as the operative treatment.

The operative management of these children is a somewhat different problem from the treatment of adults. They are kept under pre-operative treatment until they show a satisfactory weight gain. It is best to divide the operation into two stages in most cases since no one's experience is sufficient in this group to know how well the individual child will tolerate surgery. Relatively larger amounts of tissue should be left than in adult cases.

—LeRoy D. Long.

Le Seminome du Testicule et Le Seminome de L'Ovaire (Seminoma of the Testicle and Seminoma of the Ovary). By Antoine Beclere, *La Presse Medicale*, September 20, 1934.

Although the author does not make such a division, this instructive and important article may be divided into three parts:

Part I. This is a discussion of malignant tumors arising from the seminiferous tubes of the testicle. Chevassu, as long ago as 1906, after a histological examination of 128 tumors of the testicle, gave the name seminoma (seminome) to a tumor which he believed had its origin in the epithelial cells of the seminiferous tubes (tubes seminiferes). It appears that it is the same type of tumor which Ewing, of New York, calls embryonic carcinoma because of its association with teratomatous tissue. Before that time there was a lack of knowledge of the epithelial structure of tumors of the testicle which were spoken of as

sarcomata with large round cells, lymphadenomata, lymphosarcomata, etc.

Already Beclere had been impressed by the extreme radiosensitivity of intra-abdominal metastatic masses following certain tumors of the testicle, even when the primitive x-ray treatment without any attempt at the elaborate technique of the present day was employed. He classifies these unusually radiosensitive tumors as belonging to the group called *seminoma* by Chevassu; by Ewing called *embryonic carcinoma*.

Part II. Reference is made to the discovery of Schlagenhauer, in 1902, that in the embryoma there are formations analogous to a neoplasm which is developed in the female at the expense of the placenta—that is, chorionepithelioma. In that connection attention is directed to the probable value of a "biological examination of the urine," based upon the researches of Ascheim and Zondek, as a diagnostic procedure in suspected malignancy of the testicle in the male and suspected chorionepithelioma in the female. Credit is given to Ferguson, Ellis and Nicholson, Memorial Hospital, New York, for devising a technique for the "biological examination of the urine" in a paper entitled "Preliminary Note of New Method Differentiating the Testicular Tumors by Biological Means," and published in the American Journal of Cancer, 1931, No. 15, page 835. The relative amount of prolan A in the urine of the patient is estimated by the effect upon the ovary of the mouse following the subcutaneous injection of a known amount of the urine.

Part III. According to the definition of seminoma by Chevassu in 1906, one could glimpse the possibility of seminoma of the ovary. The reality of its existence was established five years later by Chenot who designated it as "primitive epithelioma of the ovary" (see doctorate thesis on "Contribution to the Study of the Primitive Epitheliomas of the Ovary," by Chenot, Paris, 1911). He showed that numerous observations of solid tumors of the ovaries designated in published articles by various names such as *areolar epithelioma*, *large round cell sarcoma*, etc., were faulty, and that such tumors were, in reality, ovarian seminomas.

According to Beclere, the histology of these tumors of the ovary—that is, seminomas of the ovary—is studied almost exclusively in the French publications of Masson, of Menetrier, of Peyron and of their pupils. These writers believe that these tumors of the two sexes have a common origin at the expense of germinative elements (elements germinatifs). In support of this conclusion, the work of Winiwarer, who showed that in the histogenesis of the genital glands, in male and female, there is a common origin from identical primordial undifferentiated germinative elements, is cited.

There are some interesting case reports. The first one is by Thelin and Rosset about a girl of 18 upon whom an operation was done for an enormous pedunculated tumor arising from the left ovary in 1925. In addition, it was found at operation that there was a large retroperitoneal mass in the region of the left kidney, extending to and intimately attached to the aorta so that its removal was impossible. Microscopic examination of the ovarian tumor showed that it was a seminoma. A little later there was rapid growth of the retroperitoneal metastatic mass. X-ray treatments were employed, and at the end of three weeks the tumor had disappeared. Twenty months later the patient was perfectly well.

Jean Hoche reports the case of a woman 22 years of age upon whom an operation was done for the removal of an ovarian tumor by a surgeon in Paris, in May, 1927. There was an infiltrating mass in one

broad ligament that could not be extirpated. This mass was so large that it filled the larger portion of the pelvis. In October there was one x-ray seance, then she was sent to the anticancerous center at Nancy for additional treatment, but when she arrived there was no evidence of tumor. But in December there was a recurrence. Another incomplete operation was done. The pathological report was seminoma of ovarian origin. Vaginal and rectal examination disclosed a mass the size of a mandarin in left culdesac of Douglas. Methodical x-ray treatment was employed. The mass disappeared within two months. Two years later there was no evidence of a mass, and the general condition was good.

There are other case reports of the same character, all of them tending to show that there are tumors arising from ovarian tissue which are exactly similar, histologically, to the seminoma of Chevassu, or the embryonic carcinoma of Ewing, and all of them tending to show that these tumors are strikingly amenable to roentgen therapy.

—LeRoy Long.

#### EDUCATION IN PHYSICAL THERAPY IN THE STATE OF PENNSYLVANIA

Frank H. Krausen, Philadelphia (Journal A. M. A., Dec. 22, 1934), states that although, in certain centers, the practice of physical therapy has made remarkable strides during the last five years, widespread knowledge of the subject is still lacking. This is primarily due to the fact that the present organizers of medical curricula are for the most part unacquainted with physical therapeutics and hence have failed to include it in their program. The channels through which medical education in physical therapy has been and still further should be developed are: (1) the premedical teaching; (2) the undergraduate medical teaching; (3) the graduate medical teaching; (4) the teaching hospitals; (5) the state and county medical societies, and (6) the medical journals. Although slow but steady progress is to be seen in institutional education in physical therapy, there is still a great need for postgraduate education "outside of teaching institutions." The Committee on Education of the Council on Physical Therapy has expressed the belief that "tangible and useful results" may be obtained by well organized courses of instruction given by state and county societies. Kovacs mentions that "a five day seminar was held, under the auspices of the Committee on Education of the Philadelphia County Medical Society" and that "the entire series of these lectures was published in book form." This seminar, held in April, 1932, gave startling proof that practicing physicians were eager for good instruction in physical therapy, since, "to the surprise of the committee, over 400 physicians registered for the course—over sixty physicians attended the course from parts of Pennsylvania outside of Philadelphia. The author is of the opinion that there is no reason why every county society in the country cannot present such a seminar, suiting its program to the local needs, so that throughout the United States physicians now "hopelessly confused" may gain some "clear ideas" concerning physical therapy. Much might be done to promote rational training in physical therapy by obtaining the cooperation of the editor of each state medical journal in establishing a column on physical therapy. The Pennsylvania State Medical Journal has done this successfully. Just as the Council on Physical Therapy has published a sanctioned authoritative article on various phases of physical therapy in the columns of The Journal of the American Medical Association, so might each state journal publish a briefer, committee-sanctioned column on more fundamental phases of physical therapy.



### ANTITOXIN VERSUS NO ANTITOXIN IN CONVULSIONS IN CHILDHOOD

M. G. Peterman, Milwaukee (Journal A. M. A., May 26, 1934), states that a revised classification of convulsions in 500 children demonstrates the basic diagnosis as epilepsy in 33 per cent of the cases, onset of acute infection in 22.8 per cent, cerebral birth injury or residue in 15.4 per cent, spasmophilia in 13.6 per cent, miscellaneous causes in 8.8 per cent and cause unknown in 6.4 per cent. There was no recognized case of cerebral sinus thrombosis, allergic basis, hypoglycemia or hyperinsulinism in this series. Of the convulsions, 6.6 per cent occurred in the first month of life, 13.6 per cent in the second five months of life, 40.2 per cent between 6 and 36 months of age, 26.4 per cent between 3 and 10 years of age and 6.4 per cent between 10 and 15 years of age. In 6.8 per cent of the cases the age of the child at the time of the first convulsion could not be obtained.

### COMPLICATIONS OF PEPTIC ULCER: THEIR PROGNOSTIC SIGNIFICANCE

Sara M. Jordan and Everett D. Kiefer, Boston (Journal A. M. A., Dec. 29, 1934), state that obstruction, hemorrhage and intolerance to alkalis are complications that influence prognosis in the medical management of duodenal ulcer. Obstruction of all degrees in the group of seventy-nine cases that they studied was relieved in 89 per cent by medical management. It recurred later in 13 per cent. Obstruction, hemorrhage and intolerance to alkalis were all unfavorable factors in the medical management of the disease. Since hemorrhage had the least effect on prognosis; obstruction was next in its unfavorable influence; multiple hemorrhage and intolerance to alkalis had the most harmful effect on the later course of the disease.

### INDICATIONS FOR THERAPEUTIC ABORTION FROM THE STANDPOINT OF THE NEUROLOGIST AND THE PSYCHIATRIST

Clarence O. Cheney, New York (Journal A. M. A., Dec. 22, 1934), reviews some of the opinions of neurologists and psychiatrists on therapeutic abortion and reports a number of specific cases of mental disorders, involving the question of abortion, from which he concludes that: 1. There appears to be no individual neurologic or psychiatric disorder that is absolute indication for abortion in women suffering from such disorders. 2. Experience shows that some women with severe advanced neurologic disorders may go through pregnancy and have healthy children. 3. Experience shows that some women suffering from severe mental diseases may pass through normal pregnancy and childbirth. 4. Experience shows that abortion does not necessarily prevent a recurrence of mental attacks or bring about recovery from attacks already existent. The pregnant woman's general physical condition must be given careful consideration in a decision regarding the termination of pregnancy.

### STUDY OF ONE HUNDRED CASES OF JAUNDICE, WITH PARTICULAR REFERENCE TO GALACTOSE TOLERANCE

During the last three years Leon Schiff and Fanny A. Senior, Cincinnati (Journal A. M. A., Dec. 22, 1934), studied a group of 100 patients giving particular attention to clinical manifestations, galactose tolerance and ability to excrete bromsulphalein. They determined the degree of jaundice during the course

of illness by means of the icteric index and van den Bergh determinations and the presence or absence of complete obstruction by study of duodenal contents, urine and stools. They feel that laboratory studies, particularly the galactose tolerance test, may prove of great help in the diagnosis of some cases and lend confirmatory evidence in others. The technic of the galactose tolerance test that they employed was essentially that given by Shay and Schloss. The galactose tolerance test was positive (output of galactose exceeded 3 Gm.) in forty-nine of fifty cases of catarrhal jaundice and fourteen of fifteen cases of acute toxic hepatitis. A negative test (output of less than 3 Gm.) was obtained in all of twenty cases of obstructive jaundice. Negative tests were mostly obtained in cases of cirrhosis and neoplasm of the liver. The test appears of great value in differentiating acute (toxic or infectious) jaundice from obstructive (extrahepatic) jaundice. The galactose tolerance bears no direct relationship to the degree or duration of jaundice or to the amount of retention of bromsulphalein. In the later stages of acute intrahepatic damage it may remain positive when other tests of liver function have become negative. The test should be repeated when a discrepancy arises between clinical and laboratory observations.

### OBLITERATIVE VASCULAR DISEASE: PRELIMINARY REPORT OF TREATMENT BY ALTERING NEGATIVE AND POSITIVE PRESSURE

Geza de Takats, Chicago (Journal A. M. A., Dec. 22, 1934), believes that the principle of treating organic vascular obstructions by an intermittent negative pressure environment is physiologically sound. He employed the apparatus of Herrmann, delivering 80 mm. of negative and 20 mm. of positive pressure, on twenty patients. Ten of them had arteriosclerosis, four suffered from acute embolic or thrombotic, two were afflicted with Buerger's disease and four had endarteritis obliterans. The improvement was gaged in regard to rest pain, intermittent claudication, changes in color, changes in the oscillometric curve, the healing of ulcers and the effect on frank gangrene. Rest pain was promptly abolished with the beginning of the treatment. Intermittent claudication was improved in some of the cases, chiefly those in which there was sufficient cardiac reserve and which were treated long enough. Cyanosis improved, particularly in the frost bites. The oscillometric curve of the total group did not change, except in one instance. Indolent ulcers healed more promptly. In the stage of frank gangrene, amputation became necessary. The most favorable cases were those presenting involvement of the smaller vessels and relatively less cardiovascular damage. This seems to be at variance with the experience of Reid and Herrmann. The least favorable results were obtained in the hypotensive arteriosclerotic patients with cardiac damage and flat or absent oscillometric curves at mid thigh. The acute vascular obstructions all came too late for treatment. The two cases of Buerger's disease showed no response. The endarteritic patients were generally benefited. The apparatus requires technical modifications, so that it can be used for a longer period of time, that it be noiseless and that it may encase larger areas of the extremities. At present the method should be under the control of peripheral vascular clinics with facilities of hospitalization, careful selection of cases and evaluation of results. The therapy is a valuable adjunct to other useful methods already in use. Late results cannot be predicted. They will be governed mainly by the underlying cause and progressive tendency of the vascular occlusion.



### DIABETIC CATARACT: INCIDENCE AND MORPHOLOGY IN ONE HUNDRED AND TWENTY-SIX YOUNG DIABETIC PATIENTS

C. S. O'Brien, J. M. Molsberry and J. H. Allen, Iowa City (Journal A. M. A., September 22, 1934), studied the crystalline lenses in young diabetic subjects in order to determine the incidence and morphology of cataracts in such patients. The report is founded on repeated detailed examinations of the lenses in 126 diabetic patients up to and including the age of 33 years. Most of the patients, when first seen, had been on treatment for some time. Practically every lens in the entire series showed occasional small punctate congenital opacities and there were a few in which coronary cataract was present; the diagnosis in such cases was usually not difficult, but in those lenses in which doubt existed the changes were classified as congenital. The incidence of cataract was 16 per cent. The morphology of these cataracts differed, but two common types of lens changes were encountered: 1. Snowflake or snowstorm cataract. This type was found in 60 per cent of cases and appeared as innumerable small grayish white flaky opacities in the anterior and posterior cortical areas. In a routine study of several hundred cataracts it was seen, with one exception, only in persons with diabetes. 2. Posterior subcapsular cataract. This type was found in 70 per cent of cases as a saucer-like posterior subcapsular opacity composed of confluent gray granules and oftentimes iridescent crystals. It is not peculiar to diabetic cataract, since similar changes may follow ocular injury or disease, and it has been noted in senile cataract.

### UNSTABLE OR IRRITABLE DUODENUM: CLINICAL OBSERVATIONS IN ONE HUNDRED CASES

Julius Friedenwald and Maurice Feldman, Baltimore (Journal A. M. A., Dec. 29, 1934), endeavor to present the clinical picture of a not uncommon form of duodenal disturbance known as the irritable or unstable duodenum. They find that in a study of 100 cases of the unstable duodenum, the condition was found more frequently in men than in women and more commonly between the years of 20 and 40. The symptoms are by no means characteristic and the condition may simulate duodenal ulcer, cholecystitis, appendicitis or other abdominal disorders, though these may be actually present as direct etiologic factors. Nervous and neurasthenic manifestations are usually prominent. Gastric hyperchlorhydria is more com-

monly present. Evidences of instability and spastic states in other portions of the intestine are quite frequent. The diagnosis is established definitely by means of roentgen evidence. This consists in the detection of increased motility, transient irregularities and fibrillations, spastic manifestations and sensitivity over the duodenum, together with an absence of an ulcer filling defect in this area. The treatment must be directed to a restoration of the duodenum to its normal tone, which is best accomplished by means of diet, rest and improvement of the nervous system. In severe cases, duodenal lavage and alimentation may be resorted to with benefit. When this condition is the result of reflex causes, treatment must be directed to the primary disorder. Belladonna and atropine are effective remedies in relief of spasm.

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## REPORT OF EXAMINATION FOR LICENSES TO PRACTICE MEDICINE

Examination held at Huckins Hotel, Oklahoma City, December 11th, 1934. The following applicants passed:

Name	Year of Birth	Place of Birth	School of Graduation	Year of Graduation	Home Address or Previous Location
Kerr, Walter C. H.	1903	Peoria, Ill.	Univ. of Okla.	1933	Clinton, Okla.
Wainwright, Tom Lyon	1909	Hattiesburg, Miss.	Univ. of Okla.	1933	Okla. City
Greer, Rex	1906	Woodford, Okla.	Univ. of Okla.	1933	Denver, Colo.
Breco, Davis	1899	Canton, Tex.	Univ. of Okla.	1933	Ada, Okla.
Hackler, John F.	1910	Tahlequah, Okla.	Univ. of Okla.	1933	Okla. City
Lingenfelter, Paul Brann	1907	Clinton, Okla.	Univ. of Okla.	1933	Okla. City
Woodson, Orville McClure	1907	Poteau, Okla.	Univ. of Okla.	1933	Poteau, Okla.
Harman, David Sinclair	1908	Hastings, Neb.	Northwestern	1933	Tulsa, Okla.
Spence, Harry Metcalfe	1905	San Angelo, Tex.	Harvard Med.	1930	Ponca City, Okla.
Newman, Roy Ellsworth	1904	Grand, Okla.	Baylor	1932	Shattuck, Okla.
Etherton, Monte Charles	1887	Jackson Co., Ill.	St. Louis Univ.	1912	Tulsa, Okla.
Lain, Everett Samuel	1876	Delta Co., Tex.	Vanderbilt	1900	Okla. City
Garrett, Davy Lewis	1888	Cook Co., Tex.	Atlanta P. & S.	1910	Tulsa, Okla.
Bowen, Ralph	1898	Iowa City, Ia.	Univ. of Iowa	1924	Okla. City
Gray, Charles McCurdy	1905	Baltimore, Md.	Johns Hopkins	1930	Miami, Okla.

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### DIABETIC PROBLEMS

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OKLAHOMA CITY

Sir William Gull, Queen Victoria's physician, said: "What sin has Pavy committed or his father before him that he should be condemned to spend his life seeking a cure for an incurable disease?" Thus now we are sitting almost within the shadow of the laboratory where a definite treatment has been found lengthening the span of life for these so afflicted. This has been the outstanding development in medicine for the last decade. That, together with the fact that we are saving our children from the acute sudden deaths and condemning them to old age and diabetes. The high nervous strain of modern life with the excessive eating, has brought diabetes more and more to the fore as an economic problem, and also as to morbidity and mortality. It is estimated in the states that there are one million diabetics, and that the mortality has raised from 20th to 10th place as to the cause of death.

Mark Twain facetiously put it, "The way to attain longevity is to have a chronic disease and continually treat it." Joslin dedicated his 1934 Manual "To those individuals who have conquered diabetes by living longer with it than they were expected to live without it." Earlier diagnosis and better treatment as in tuberculosis, result in cases of longer duration and in compliance with the above, extends life and gives more chances for complications. The present diabetic is half and half a medical and surgical diabetic.

While it is true that diabetes is a chronic disease, yet it is not accompanied by pain like rheumatism and cancer, or has it the property of contagion and danger as in tuberculosis. Again, it is retiring

and does not vaunt itself as does the many skin diseases.

This has replaced coma in importance so that surgery is becoming more and more an increasing object of importance in handling those so afflicted, and the surgeon is faced with the care of a group of cases requiring special consideration, and leans on the internist for his advice and cooperation.

But the case of diabetes travels devious paths from the cradle to the grave, not respecting any tissue or any organ of the body, nor does it lend immunity to any of the troubles to which flesh is heir. But on the other hand, it lays the tissues open to lessened resistance and the chance of a general bacteriaemia is more likely, thereby this lessened resistance of the tissues is now considered the cause rather than the hyperglycaemia which was formerly credited. It is the inadequately treated diabetic who develops many of the complications and sequelae of diabetes. Intercurrent infections are far less a menace now than formerly. "The danger of tissue damage in diabetes is now attributed to the duration of the disease alone, and will decrease in proportion to the restoration of normal carbohydrate and fat metabolism, with its coincident water and mineral balance. The levels at which these are capable of producing tissue damage are as yet unknown." J. V. Mering<sup>2</sup> and Minkowski, from the laboratory of Medical Clinic in Strassburg, wrote: "The striking feature in this case is that dogs, after complete removal of the pancreas, are diabetic and, just like diabetic man, show a diminished tendency to the healing



of wounds and a lessened resistance against the pus producers which invade. In diabetic animals with the observations of the same rules (i. e., antisepsis) we were able only once among twenty to get complete healing. Almost without exception we had to fight infection of the operative wound."

Everyone recognizes in a diabetic the symptomless superficial external ulceration, showing the absence of the usual signs of local resistance to general infection and death, also the degenerative changes which the arteries undergo. The involutional changes in the arteries of all ages are marked, making in the very young diabetic indirect complications such as arteriosclerosis, cataract, etc., quite parallel to the older one. White found one in three cases of children with diabetes of long duration and they had calcified arteries. Aside from the production of arteriosclerosis it is believed that diabetes has a part in the production and cause of gangrene by its influence on nutrition and metabolism of the tissue. You can appreciate the wisdom of Woodyatt's remark when someone asked him if he was a diabetic specialist and he quickly retorted, "No, I am not a diabetic nor am I a specialist." I know of no disease that causes the internist to go so far afield and consult the various specialists as in the protean complications of these patients, but how jealous it is of its stellar role, assiduously assuming the center of the stage when any neophyte tries to come in and share in its importance. The obstetrician admits that the diabetes does more harm to the pregnancy than the pregnancy does to the diabetes. It seems that diabetes occurring during pregnancy is more common than pregnancy occurring during the course of diabetes. The foetus does not seem to supply any insulin to the mother. Lactose and glucose will be found in nearly all cases of pregnancy, but it may be more in the form of renal diabetes or a lowered kidney threshold.

Diabetes is not more severe after the pregnancy than before it, yet during pregnancy careful handling should be instituted as in the first trimester insulin requirement is increased, remains constant in the second, and increases in the third. Duncan<sup>1</sup> claims that a gain in tolerance is unfavorable to the child as it is due to abnormally active fetal pancreas. The pregnant diabetic however is liable to sudden change in metabolism, i. e., eclampsia,

diabetic coma and hypoglycaemia during and after labour.

The oculist sees the eye complications run a riotous course until the metabolism is under control and back to normalcy. The operation for cataract should not be considered until carbohydrate metabolism is well under control and the tissues are adjusted to the new order.

One notable exception to this stellar role however must be considered in coronary thrombosis: "Where caution must be used in the administration of insulin where sugar is found in patients suffering from coronary occlusion. Friedman has pointed out that insulin even in diabetic individuals may seriously augment the various heart symptoms occurring at the time of the occlusion. The severe complications as acidosis and coma are apparently not seen during an attack of coronary thrombosis, so attention may therefore be directed almost entirely to the relief of the symptoms resulting from the coronary disease itself." Herrick<sup>2</sup> was led to believe from his personal observations that the occurrence of high blood pressure and increased concentration of glucose in the blood is present in a definite group of cases characterized by four cardinal symptoms: hypertension, hyperglycaemia, obesity and arteriosclerosis. Hoppe-Seyler<sup>3</sup> and Herxheimer pointed out that in cases in which arteriosclerosis of the kidneys and hypertension are present, diabetes begins through an analogous arteriosclerosis of the pancreas.

The careful surgeon formerly looked askance at the surgical complications because of its inroads into his statistics, but now with the knowledge and therapeutic armamentarium of recent years, the diabetic has become a relatively safe surgical risk, going through operations which one not so handicapped would scarcely survive, so that insulin has placed new responsibilities on the surgeon. The surgical diabetic formerly has been the serious diabetic, the diabetic who died. Formerly no one could criticize the surgeon or the physician for hesitating to advise an operation upon a diabetic, but for the diabetic of today the best that surgery as well as medicine has to offer can be given him. When an operation is necessary to remove infection there should be no hesitation for even a mild diabetes may become permanently severe. It may be then too late to operate. This however means that internist and surgeon, nursing and hospital per-

sonnel, work in harmony and unity with one single purpose, each one having and conscientiously following the offices to which they are entrusted. This I believe to be the crux in the proper handling of these patients, and without which human life is hazarded and science a mere hoax. Joslin's trained crew for the handling of his coma cases shows the practical application of the above statement, and now coma, once the exitus of most all diabetics, under proper care has fallen almost to a vanishing point in the young diabetic, but because of its complications has still a mortality of fifty per cent after the quininium.

It is axiomatic that acute infections in a diabetic, whether medical or surgical, suddenly lowers the tolerance for carbohydrates. A mild infection of the upper respiratory passages, the common cold, has the capacity of causing as much disturbance and interference with the action of insulin as a severe illness such as pneumonia. It is a fact that the one anatomically visible feature of carbohydrate metabolism, glycogen storage, tends to approach that of the normal individual in insulin treated cases, but that in cases with sepsis the picture tends toward that of the untreated diabetic in spite of insulin, i. e., "uncontrolled diabetes in childhood is characterized morphologically by faulty distribution of glycogen in the skin, liver, muscles, heart, and by abnormal deposition of fat in the liver, reticulo endothelial system and blood vessels. Histochemical evidence of abnormal fat metabolism is greater in the child than in the adult,"<sup>6</sup> and to its greater susceptibility to coma also xanthoma diabetorum again in the maltreated or untreated child disturbance of lipid metabolism as shown in atheromatous arteries and lipid deposition in the reticulo-endothelial system. Thus the child presents the best study of arterial degeneration and other complications.

An acute intercurrent infection may call for the administration of heroic doses of insulin during the presence of the infection, causing the belief that the patient is insulin fast, but let the infection be relieved as by the crisis of a pneumonia, the amputation of a suppurating limb or other surgical procedure, and the amount of insulin needed will immediately fall dramatically, and eventually return to the preinfective dosage. Infections do not make the diabetic permanently worse. Joslin says, "It is very difficult in my cases

to associate the onset of diabetes with infection." Before the discovery of insulin this seemed to be the case, but is not so now. Rosenthal<sup>10</sup> and Behre<sup>11</sup> found that when fresh pus was mixed with the insulin and injected into rabbits, the influence of the insulin was abolished. This also influences the formation of glucose from proteid and fat, and the storage of glucose as glycogen in the liver and muscles. Under this stress also, the breaking down of proteid and fats, ketone bodies are produced with development of acidosis and coma, especially with infections and anaesthetics. Hence the meticulous care in anamnesis and diagnosis of all cases coming to surgery will obviate such a catastrophe by preparing the patient for his surgical ordeal. "Also to operate" in the presence of a positive diacetic test greatly increases the risk to the patient and the responsibility of the surgeon and of the internist. Emergency operations can be done with a patient in even severe acidosis. Operations of choice however should rarely be done except in the absence of diacetic acid in the urine." Freedom from glycosuria is not necessarily essential to healing, although it is desirable provided it is secured without a low carbohydrate or excessive insulin dosage.

It is better to get your blood sugar near normal if the delay is not too hazardous and if the time will permit, restore the glycogen lost from the liver and muscles, and the body adjusted to the new order of things. In so doing the immediate hazard of the operation is minimized and the ideal convalescence more assured. If perchance diabetic treatment is lost sight of post-operatively and hyperglycaemia and ketonuria return, then the healing is less assured and in the face of an infection the possibility of a blood stream infection is more than likely.

Cautious but active preoperative treatment in the face of an emergency operation, and resumption of treatment immediately afterward is certainly to be carried on. Rabinovitch even gives glucose and insulin during the operation. These cases should be kept in the medical ward under the supreme supervision of the internist who is very mindful of his responsibility and the barber surgeon looks only to the dressings and other details subsequent to the operation. We have just had three cases of gangrenous ruptured appendicitis which have recovered in a most remarkable manner where it would seem



that one not so handicapped would have succumbed to the infection.

One must always remember that "once a diabetic always a diabetic" is a fundamental principle and the history of sugar in the urine or hyperglycaemia even though not present then, should put one on his guard so he can obviate serious complications in surgery and anaesthesia.

Could one know how to prevent arteriosclerosis there would be little else to say about diabetic gangrene. The diabetic patient differs from the non-diabetic in both the local and general reaction to infection. Locally the lesion is more sluggish in appearance, yet progression is much more rapid. There is more destruction of tissues, necrosis may appear in the presence of adequate circulation earlier, and more insidious involvement of the bone may be present, and usually there is less tenderness, yet the prognosis in local gangrene is more favorable in a diabetic than in a non-diabetic.<sup>12</sup>

Lessened local and general resistance in diabetics is shown by the frequency of infected gangrene, superficial sepsis and the tendency to general septicaemia, hence recurrent appendicitis is even more of an indication for surgery in a diabetic than in a non-diabetic. It has been my experience that appendicitis occurring in diabetics practically always proceeds to gangrene and ruptures in an abdomen with few clinical symptoms, and the patient has very little if any fever or pain. That, together with the fact that grave acidosis is usually accompanied by leucocytosis and polynucleosis and because of its mimicry, makes a positive recognition a difficult diagnostic feat, especially inasmuch as a board-like abdomen and vomiting are common to both conditions. A valuable finding<sup>13</sup> is that in appendicitis the abdominal pain usually precedes the vomiting, whereas in diabetic coma the vomiting precedes the pain. Both diabetic coma and appendicitis may of course occur together. Under such circumstances the safest procedure is to institute insulin treatment and operate immediately. Diagnosis is difficult and judgment fallacious.

I have seen several cases with all the evidence of an acute abdominal crisis clear up dramatically on insulin, and with no sequelae. Hence the necessity of marshaling all the diagnostic talent available before deciding on the advisability of cer-

tain surgical procedures, thus not believing in the following quatrain:

Sees one physician like a sculler plies,  
The patient lingers, the patient dies;  
But two physicians like a pair of oars  
Wafts him more swiftly to the stygian shores.  
(Garth.)

Crecelius<sup>14</sup> reports four illustrative cases of diabetes in which there were symptoms of peritonitis. The abdominal symptoms cleared up promptly as the acidosis and coma were relieved by insulin. In another case the abdominal symptoms persisted and operation showed a perforated appendix.

A gradual onset of ketosis and sugar with *non livid air hunger* or deep labored breathing (Kussmaul breathing) with anorexia, headache, abdominal cramps, weakness, albuminuria, nausea and vomiting (sometimes with evidence of blood) are our most reliable warning symptoms that coma is imminent. With the exception<sup>15</sup> of carbon monoxide and cyanide poisoning, diabetic coma is practically the only condition in which there is the combination of healthy colored skin and dyspnoea. (Constipation and possibly pain and a board-like abdomen, or even pain limited to the lower right quadrant, or even the epigastrium, or in fact in almost any part of the body.) This pain may be cramping or colicky or steady. This symptom is all the more dangerous because the reverse may be true, that is, an acute surgical abdomen may be the cause of the coma and sometimes too, morphine is administered during this stage, but it must be remembered just as morphine masks the progress of diabetic coma, so it also makes the response to adequate treatment a more questionable end result. Kussmaul, in describing his treatment of air hunger, claimed "that warm foot and hand baths, salts, ashes, synapisms, warm cloths laid on the abdomen and subcutaneous morphine injections produced not the slightest improvement in coma." The skin and mouth are dry, florid, and the tongue usually coated, the breath has the odor of violets, the tension in the eyeballs is lowered (Riesman), and there is tenderness over the pancreas. The temperature may be subnormal and the pulse rapid, the blood pressure at first normal, falls as acidosis proceeds. Sugar in the urine, ketones, and a varying increase in the blood sugar all go to point the way to the clinical picture of a diabetic coma. In a diabetic patient (McKittrick) whose usual

temperature ranges from 97 degrees to 97.6 degrees, a temperature of 98.6 degrees is equivalent to one of 100.4 degrees in a normal person. The younger the diabetic the more unstable it is, and the quicker or more readily he may go into a coma.

The leucocytic count even in an uncomplicated coma may go to twenty or even 79,000 which may be very misleading in the presence of possible complications with infection. It is true,<sup>16</sup> however, that leucocytosis drops within twenty-four hours in coma, and the abdominal tenderness becomes more diffuse, yet the twenty-four hours' delay may spell the difference in the outcome of the case if due to an acute surgical abdomen. Joslin<sup>17</sup> says that leucocytosis is not due solely to concentration of blood by dehydration as evidenced by the fact that the number of the erythrocytes is not increased although a red cell count may rise to 6,000,000 (Pepper) and haemoglobin percentage may register 110 due to dehydration, yet a leucocytic response and temperature to a gangrene of the foot may be very mild, indeed. Hemorrhage into the stomach is also a possible cause of this leucocytosis, but among children, leucocytosis occurred eighteen times in the absence of tarry gastric contents; however, the highest counts were associated with hematemesis. The association of leucocytosis with infection is possible but grave infections have been lacking among children, although a slight febrile reaction within twelve hours of admission to the hospital was the rule. The increase in white cells was more marked in the younger than in older patients.

So we have direct and indirect complications in diabetes which touch all specialties in medicine, but I would liken the relationship of John G. Saxen's poem, where he described the Seven Blind Men of Hindoostan, who were so wondrous wise, who went to see the elephant although none of them had eyes. Each saw the elephant from his own viewpoint, each one had a perception, but it takes a conception of the diabetic in the form of some one physician who is in complete charge of the case in a medical ward who treats the diabetes, acting as the brains of the elephant who not only sees and governs the body as a whole, but who is not unmindful of the different members, remembering that diabetes is as jealous of her stellar role as an opera singer, and must be handled as carefully.

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#### THE THERAPY OF THE COOK COUNTY HOSPITAL: PAIN

Bernard Fantus, Chicago (Journal A. M. A., Dec. 22, 1934), discusses the therapy of pain as it is practiced by the attending staff of the Cook County Hospital, gives a number of prescriptions for the relief of pain and states that next to the saving of life, the relief of pain is the physician's most important function. There is no pain that resists morphine; and there are so many other means of relieving pain that may be used instead of morphine—as the morphine may be worse for the patient than the pain—that there should be no case in which the physician well versed in therapeutics cannot give relief to pain and distress by properly chosen measures, not only without harm but with positive benefit to the patient. Pain is in itself harmful, causing fatigue, insomnia, anorexia, depression of the circulation, psychic irritability and pessimism; and the longer pain continues, the more intolerant does one become of it. From a teleologic point of view, pains are generally useful; from a therapeutic standpoint they rarely are. It is more frequently useful in diagnosis. But even here it must be admitted that, the more expert the physician, the less need will he have of letting his patient suffer pain to find out what must be done for him. In most instances it is poor diagnosis as well as therapeutics to permit patients who have entered the hospital to suffer pain or distress for any length of time or until an elaborate history has been written and examination completed. The good physician should be expert enough to make reasonably adequate diagnosis promptly on admission in nearly all cases and sufficiently "therapeutic minded" to institute at once the necessary measures to make the patient more comfortable. One can get a better history and make a more satisfactory examination when the patient is not racked with pain. Of course the mere removal of the perception of pain without taking care of the cause is often harmful to the patient. This is true not only of inflammatory and of traumatic conditions but also of those cases in which the pain or distress is a fatigue symptom. Merely relieving the pain and permitting the patient to go on with his work may lead to a catastrophe just as surely as removing a danger signal from a railroad track.



## THORACOPLASTY\*

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This paper is based on the material gathered from a long established private practice, and is also based on patients in the Southern Pacific Sanatorium, a one hundred bed institution in Tucson, Arizona.

It is an attempt to outline, in some detail, our plan of procedure in handling tuberculosis patients in whom thoracoplasty becomes a consideration of prime importance. Thoracoplasty is a surgical procedure that now has many uses, only one of which will be considered in this paper today, namely: the closure of tuberculous cavities which are not closeable by other means.

We wish to stress the urgent necessity for the selection of cases and the application of thoracoplasty in closure of type three pulmonary cavities. The classification of cavities as brought out by Max Pinner in 1928 is used.

Patients with type three cavities excreting tubercle bacilli are candidates for early death, and, unless their cavities are closed by some surgical procedure, are sure to reach this goal within a very short time, at most a few years, by some clearly defined route—either by hemorrhage, bronchogenic spread of the tuberculous process, aspiration-pneumonia, direct extension, or visceral changes.

This statement is correct in 90% of cases, regardless of the fact that the amount of cough and expectoration may be limited, and the patient may be afebrile. Closure of cavities in all cases of pulmonary tuberculosis is positively and without exception essential before the patient can be removed from this hazard. Neither the size, shape, nor location of cavities alters this fact except that multiple or very large cavities, especially if bilateral, portend a more sure and earlier demise.

Thoracoplasty is indicated in patients with both unilateral and bilateral cavities. Its bilateral use is limited to extreme apic-

al cavities that can be closed by section of not more than the first four ribs on each side. Selection of these cases is admittedly a difficult undertaking and must be done with utmost care, but ultimate results have proven the wisdom of such a procedure. Unilateral thoracoplasty may be partial or complete. Contrary to the early teaching on this subject, the partial procedures have proven to be of the greatest value in well-selected cases.

### INDICATION

The one specific indication for thoracoplasty is a thick walled, fixed cavity which has not been closed by one or by some combination of the less hazardous procedures. The word "indication" has come to have a different meaning to us than it formerly had. It no longer carries an optional meaning, but is mandatory if thoracoplasty can be done without too great hazard.

As certain signs and symptoms call for appendectomy before rupture and peritonitis, so do certain types of cavities call for thoracoplasty before hemorrhage or bronchogenic spread render the patient inoperable. The fact that the death of a pulmonary cavity case is slower and less tragic does not lessen the responsibility of the attending physician.

### SELECTION OF CASES FOR THORACOPLASTY

Unfortunately there are many patients who present themselves with ideal anatomic-pathological indications who can not, for many obvious reasons, survive major operative procedures, consequently careful systematic selection is necessary. A history which brings out the age of patient, the length of time infection has existed, and the course of the disease is important because of the damaging effect produced in vital organs by long standing infections. We do not attach so much importance to age as represented by numbers of years, but rather we consider the physical condition of the patient. While forty years was once considered the maximum age, by careful selection and adaptation of the operative procedure, we have a number of cases past fifty years of age

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\*Read before Surgical Section Annual Meeting, Tulsa, May, 1934.

on whom we have done a thoracoplasty successfully. Repeated careful detailed study of the patient's physical condition is most essential. This study should include careful search for complications in other organs by the tubercle bacilli; search should also be made for unrelated diseases. Vital capacity should be determined by machine and by exercise test; this is most important. If a patient has low vital capacity as revealed by the spirometer and dyspnoea on exertion, it usually means that the patient either has a damaged myocardium or very little lung capacity left, or most likely both.

Serial xray studies are extremely important in that they point out most accurately the location and character of the lesions and tell how extensive the operative procedure will have to be in order to close the cavities successfully. X-rays enable one to estimate in advance the number and lengths of ribs necessary to be removed in order to effect a complete collapse.

Electrocardiographic studies should be made, but in our experience they seldom give us much information that we are not able to get during our physical examination.

The blood should be studied as to its cystology, coagulation time, and sedimentation rate of erythrocytes.

The urine should be examined chemically and microscopically, and if it is acid in reaction and contains even small numbers of red blood and pus cells, special study for tubercle bacilli should be made. Proper psychological study of the patient is also important. Too great fear of major surgical procedures militates against the individual's being a suitable risk. The necessity for such a consideration became apparent when we had two patients develop a psychosis following the first stage of thoracoplasty.

Early laryngeal tuberculosis, tuberculous peritonitis, and early or mild enteritis, controllable diabetes, and a not too extensive lesion in the apex of the opposite lung are no longer considered contra-indications. Experience has taught us that these secondary lesions yield more readily to treatment when the primary focus has been controlled.

Wide spread exudative or pneumonic lesions which were formerly considered suitable for thoracoplasty, if unilateral, are

now known to be best treated by bed rest or minor forms of collapse.

A wide bronchogenic basal spread and especially cavities in opposite base are considered contra-indications because of the well known resistance of basal lesions to any form of treatment. Uncontrolled diabetes and advanced enteritis together with destructive bilateral renal lesions are also contra-indications. Myocardial degeneration, even if it compensates under digitalis, should be considered a contra-indication. Dyspnoea should be considered a specific contra-indication; furthermore, extensive fibrosis and a badly damaged myocardium, both present a common symptom—dyspnoea; these usually represent a long standing disease and are suggestive of serious damage to other vital organs. Patients with dyspnoea from whatever cause, with one exception, are only made worse by thoracoplasty with further reduction of lung volume and an added burden on the myocardium. The one exception to the statement that dyspnoea is a specific contra-indication to thoracoplasty is the long standing, extensively fibrotic, unilateral case which is dyspnoeic and maybe cyanotic because the marked retraction has caused an acute angulation of the trachea and of the large blood vessels in the mediastinum. Thus in our one case of this type we followed the procedure of O'Brien and resected the third, fourth, fifth and sixth ribs in successive stages; in this way we relieved the angulation of the trachea, the dyspnoea disappeared, and we were able to complete the thoracoplasty successfully. Thoracoplasty, beginning at the top, would aggravate the condition and could easily be the cause of a surgical death.

Regardless of the fact that by careful study many patients are ruled out as unfit for thoracoplasty, we have broadened our scope greatly in the last decade, and are operating upon many cases successfully that we formerly considered unfit for such a procedure. This is due largely to the successful use of minor collapse measures improving the general condition of the patient by clearing up the less involved lung and even improving the lung with the major lesion. In this way the less hazardous procedures are used as a means of preparation for thoracoplasty. It is also due to the multiple stage procedure introduced and popularized by Hedblom. This method at once made obsolete in this country the original procedures of



Brauer, Sauerbrock, and Wilms, because it cut the mortality for this work down on a par with surgical procedures of a similar magnitude in other fields of surgery. Furthermore, it makes it possible to operate upon many cases successfully, which could not survive the original operation which was of one or two stages. Other modifications of this procedure, such as removing longer sections of ribs, even removing all of the first, second and third ribs in apical cavities, removal completely of transverse processes, supplementing these procedures with anterolateral resection, and with anterior chondrectomy have made it adaptable to, and effective in closing extremely large cavities where the original posterior thoracoplasty procedures failed.

#### PREOPERATIVE TREATMENT

The patient should be at complete bed rest from a few weeks to a few months in order that bed habits be well formed, cavities emptied by posture, if necessary, and daily quantity of sputum determined. The skin of back is inspected daily and rendered free from pimples and other sources of infection. Nourishment should be pushed, fluid intake and output determined daily, temperature, pulse, and respiration recorded several times daily. If a complete thoracoplasty is to be done, a permanent phrenic interruption is done by the method of Goetz. The phrenic interruption should be done at least two weeks before the major surgery is begun. If done at this time, it can be used as a test to see if the contralateral lung will carry on the respiratory function; or if dyspnoea will develop. Then, too, if there is sufficient rise of the diaphragm, resection of the ninth, tenth and eleventh ribs may not be necessary, thus substituting a minor operation for a major one with equally good results.

#### PREPARATION FOR OPERATION

Preparation for operation begins early in the morning set for operation by having patient empty cavities and bronchial tree. This is done by forceful coughing and posturing, if necessary. The same amount of sputum should be raised as has been raised each morning for the past week. Depending upon size of patient, an appropriate dose of morphine is given one-half hour before entering operating room. Morphine is never administered before cavities and bronchi have been emptied.

#### POSITION ON TABLE

The patient is placed on the table with

side to be operated upward and fastened in this position so no rotation on the table, hence no flattening out of patient, and no slipping off the head of the table is possible. Before patient is put to sleep, table is shifted to 20 degree Trendelenburg position and is kept in this position until after operation is completed and patient is awakened and made to cough.

#### SKIN PREPARATION

After patient is asleep, preparation is done by scrubbing the skin first with ether for five minutes and then with alcohol for five minutes. We prefer this preparation because it is effective and because all skins tolerate it without irritation; this is a point of great importance when several operations in rapid succession have to be performed.

#### ANESTHESIA

While anesthesia may to a certain extent be a matter of choice, by trial and error we have come to think that nitrous oxide and oxygen is the anesthetic of choice. Certainly the gaseous anesthetics are preferable to the basal anesthetics—ether, local, infiltration or paravertebral blocks.

#### OPERATION

We use the incision brought out by John Alexander which has proved to be the best incision for good exposure. This incision begins one inch below upper border of trapezius muscle and is extended downward close around the scapula to posterior-axillary line. With this incision the scapula can readily be raised by separating areolar tissue and cutting serratus muscles from the first and second ribs, thus exposing all ribs from the first to the seventh. The size and location of the cavity predetermines the number and lengths of ribs to be removed. Only sufficient number and length of ribs to effect collapse of cavity are removed, thus saving all possible healthy lung. The number of ribs sectioned at any one time depends entirely on condition of patient as determined by the anesthetist during operation. We have no set minimum number of ribs to be removed at any one stage, but always a maximum. We never remove more than three ribs at any first stage, nor more than four at any subsequent stage. We have often closed the wound after removal of only one rib, and have on one occasion packed the wound with gauze after having it opened without removing any rib at all. Under such conditions we unpack the wound and proceed the first sub-

sequent day that the patient's condition will permit. The second stage in back, if the condition of patient warrants, takes place after fourteen days and usually consists in removal of sections of the fourth, fifth, sixth and seventh ribs. This is done because if sections of the seven upper ribs are removed, the scapula fits snugly and painlessly in this space and helps in the collapse. If sections of only six ribs in back have been removed, the lower angle of the scapula rides on the seventh rib; this prevents it from settling into the operative space and assisting in collapse; furthermore, friction between scapula and the seventh rib causes pain, and the seventh rib ultimately has to be removed for comfort. We never use drainage after any stage. The reasons for this are: First, serum left under scapula, if confined, adds materially to collapse; second, drainage of any clean wound invites infection.

#### HUGE APICAL CAVITIES

To effect closure in huge apical cavities, it may be necessary to remove all of the first and second ribs, even all of the third rib, occasionally. When all of the first and second ribs are removed with the cartilages, it is not necessary to remove the corresponding transverse processes. With the complete removal of these ribs, collapse is downward and not inward; the transverse processes of all other sectioned ribs should be removed down to and one below the bottom of the cavity. Due to the fact that the first transverse process is so closely surrounded by important and vital structures, it is a tedious and time-consuming procedure, and operative time is very important to these patients. Removal of all of the three upper ribs can be accomplished through the posterior incision. We have frequently removed all of the first rib and a few times all of second, but never all of the third through a posterior incision. We prefer to remove shorter sections of ribs, thus protecting the patient. The hazard to the patient is increased in direct proportion to the length and number of ribs removed at any one operation by permitting increased amount of paradoxical motion which is one of the constant and formidable dangers in thoracoplasty. Paradoxical breathing, when long sections of ribs are removed, is always present except in the rare case where a very thick pleura prevents such a movement. Having removed shorter sections, we then follow later with anterolateral or an interior operation removing the remaining portion of ribs together with cos-

tal cartilages, if necessary. The anterior or anterolateral operations usually follow recovery from second stage posteriorly. As a final movement after resection of ribs and debridement of wound, all periosteal surfaces and the ends of resected ribs are scrubbed with 10% formalin solution. This prevents rapid regeneration of bone, allows more time between operations, and permits more effective collapse.

#### POST-OPERATIVE TREATMENT

Post-operative treatment begins while the patient is still on the table and in the Trendelenberg position. Carbon dioxide and oxygen are administered immediately upon withdrawing anesthetic, waking the patient. The patient is then made to cough violently thus emptying bronchi and trachea of all accumulated secretions by this means, avoiding spread to other parts of the lungs. The patient, after being returned to bed, is caused to cough and raise once each hour for the first twelve hours, then once each two hours for the next twelve hours. If coughing is too painful, morphine is administered and while under its influence the patient is made to cough and raise. Two thousand cc.'s 10% solution glucose is administered intravenously in first six hours. If shock is marked and patient does not react promptly, a blood transfusion is done. If patient remains in shock or is dyspnoeic, he is placed in an oxygen tent and kept there until relieved. The patient is always re-xrayed before any next stage is performed, for two reasons: to see if there has been any new developments in the interval, and to relocate the cavity. Cavities are likely to migrate under the influence of collapse, and they sometimes close sooner than was expected. Close xray check may at times save an added stage of thoracoplasty.

Finally, if infection takes place with this large area under the scapula exposed, we have learned not to temporize, but to open the wound widely. Much time can be saved, and the thoracoplasty completed sooner.

#### SUMMARY

1. Selection of cases for thoracoplasty should be done by careful group study.
2. Patient with type No. 3 cavities whose condition will permit should have thoracoplasty.
3. Minor collapse procedures are used in certain cases as method of prevention for thoracoplasty.
4. Cases past the age of 50 can be suc-



cessfully operated if carefully selected and multiple stage method is used.

5. Dyspnoea is a specific contra-indication to thoracoplasty with one exception.

6. Administration of Co<sub>2</sub> and O<sub>2</sub>, when anesthetic is discontinued, to awaken patient causes prompt lung expansion, and cough is very important.

7. Post-operative care with plenty fluids and administration of oxygen, if patient is dyspnoeic, will make for comfort and safety in these cases.

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DISCUSSION—*Dr. Horace Reed*, Oklahoma City:

This is an interesting presentation by Dr. Thomas, this report of a surgery which in this country is only a few years old, and yet during these few years remarkable changes have taken place in the idea of what the operation consists and what ought to be done. In 1925 Alexander brought out his book on surgery in pulmonary tuberculosis. In that he described the development of the Sauerbrook operation and gave a lot of statistics, and at this time, nine years later, that book is obsolete, so rapidly has this surgery advanced. Only a few years ago the internists were making the remark that there was one disease the surgeons couldn't take away from them and that was tuberculosis. Without any question, whatever, surgery is rescuing a number of these cases, and so we do not know what this surgery will be five years from now, so rapid is its development. I began this work about nine years ago in a small way. I tried the technique as described by Alexander in his work, and we got pretty good results. All of my first few patients are living, so far as I know at this time. Some

of them were a little slow getting results because I didn't resect enough ribs to get the proper amount of collapse and healing was delayed and in some cases not entirely satisfactory. We were very careful in the selection of our cases. I then thought there might be some other form of treatment. I found that out there in Tucson they were using the technique as brought out by Casper, resecting some of the ribs away and pushing the pleura away, collapsing the cavity in that manner, and only partially closing the wound, leaving it packed with gauze. I saw patients who had been there for years. Most of them were there for months and months. I was not satisfied, and finally went in with what Alexander was doing, and he was doing this then altogether which Dr. Thomas has brought out here today. I will now dwell on something most important, I think, and that is the selection of the patients. I do not select them. I leave that up to the pathologist, and we are as careful as can be in our selection. You are working on patients that are already reduced in strength and vitality, and you have got to be doubly cautious. This isn't a surgery that is of the common variety like general surgery. I took it up by myself. I happened to be in the same office as Dr. Long, whom most of you know. I didn't take it up because of the compensation, because all of our rich patients go to Thomas. The poor patients stay here, and I get a big kick out of doing it, because it is remarkable what some are doing after operation. As Dr. Thomas says, the patient is not cured by the operation, but it is possible to put the patient in condition to pursue the course in getting well. I leave it to the house internist to select the patients and he talks it over with me and we consider the cases very carefully together, for we have found that some you must avoid. If a patient does not show some fibrosis you must leave it alone. How does tuberculosis heal? By fibrosis, so if you don't find the fibrosis, keep your hands off. Just recently I operated one who showed very little fibrosis and I made a mistake there; he was very sick. Another type I avoid is the patient who has never had any discipline. I have lost two doctors with psychosis five months following operation. I like a patient who goes into it smiling and happy, and when you get those people who have not been properly trained and disciplined you are working with a hazardous patient.

I am glad, indeed, that Dr. Thomas

brought this question up, and it was presented here in such a nice way. I wish I had time to go into the matter of handling these patients at the University Hospital. They come to me without any funds, and I just wish we could do more for them. Maybe we can gradually work up to some-

thing like that. I personally thank Dr. Thomas for his timely presentation of this paper.

*Dr. Kuhn:* I think this is a most timely subject in surgery right now. I feel we are deeply indebted to Dr. Thomas for coming here to present this paper to us.

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## THE PIGMENTED MOLE

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FRED H. CLARK, M.D., F.A.C.S.

EL RENO

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A look at the above title and one might think there certainly was very little that could be written about so apparently limited a subject. But while the title is a small one, it is really filled with dynamite, as I shall endeavor to show. How many times in the past have we seen a small black mole on the back of a patient's shoulders, and in reply to the question as to whether or not it should be removed, advised the patient that as long as it is not bothering or causing any discomfort it should be allowed to stay there, little dreaming that possibly in the near future it might become a very dangerous adversary.

It belongs to the verruca family, differing from the more common variety in being filled with black pigment known as melanin. It appears to be most commonly seen on the adult, with no noted difference between the male and female; the attention probably is more frequently called to its presence on the male because of the greater harshness of the clothing worn, thus causing the greater amount of irritation and discomfort; if the discomfort reaches a stage where it is of great inconvenience to the patient, the usual procedure was to remove the growth; sometimes by ligation if there was a long pedicle present, but in late years more frequently by means of the electric cautery or knife.

It is surprising what a small amount of space has been given to the consideration of this subject by the various text books; even as late as 1929 Babcock, in his book on "Surgery," gives but very little space to the consideration of this subject, the entire text covering but little more than a paragraph. The mole apparently

originates in the skin, with the cells of spindle shaped variety, though sometimes it may be found to have its origin in the choroid or ciliary body; of the two cases, the report of which follows, both originated in the skin with a resulting metastasis, which extended in an almost inconceivable manner. There is really very little difficulty in the question of a proper diagnosis for the growth has nothing else exactly like it with which it might be confounded except a flat brown mole which is a benign growth and so never to be feared because of possible later malignancy; this growth is most frequently seen on the upper portion of the trunk, also, but it does not become irritated easily, so seldom brings a patient to the doctor for relief.

The question which naturally arises is what should be done when a patient with such a growth applies to the doctor for relief; if no irritation has already been started so the patient has no discomfort, one might put the question off for a short time until the matter could be studied, but when the patient comes and wants immediate relief, that is not possible. With this question in mind, I approached Dr. E. S. Lain for advice in such a condition. The Lain and Roland Clinic has had a very extensive practice in cases of this character and I felt advice from them would be of a character that could be relied upon. Dr. Lain said he had nothing to offer beyond the complete and extensive removal of not only the growth but the surrounding tissue so as to be sure, if that were possible, of getting all the infected tissue and always using the electric knife for the removal; even this, he said, in their experience could not be offered as a 100% cure, for they had removed a number of



them using every precaution mentioned, only to have the patient return later with a general metastasis so far advanced that nothing could then be done. However, he said they had a limited number of apparent cures—patients on whom they had removed the growth, alive, and with no evidence of a return in five years. This, of course, gives a little hope, especially if the case is seen early and before metastasis has started.

It should always be remembered that the metastasis may take on the form of sarcoma or carcinoma due to the class of tissue in which the melena arises; if from the skin, most frequently a sarcoma, but if from epithelium, then it will take the form of a carcinoma.

The two cases reported here, both arose from the skin, and one had been operated and the mole removed and the other had not; in one the metastasis assumed the form of a carcinoma, and in the other no autopsy was permitted so the exact character of the metastasis could not be learned.

One simple thing to be noted will at once make the diagnosis a positive one and that is, if a gland can be secured and incised it will be found to be perfectly black throughout and of a cheesy consistency; if one can secure a gland of this character prior to beginning any treatment, much trouble can be spared the patient and possibly expense, for there is no treatment known at this time which is of the slightest avail; the condition is usually a generalized metastatic one, so no form of surgery is applicable and repeated efforts have shown the x-ray treatment to be wholly without avail.

In the two cases reported herewith, one was not diagnosed until at the time of the autopsy, and the other before death, but not until a generalized metastasis was present, so nothing could be done to effect a cure.

Case 1. A white male, about 40 years of age, a W. W. veteran about 5 feet and 8 inches tall and weighing approximately 140 pounds, admitted to the hospital for treatment of supposed pulmonary tuberculosis; soon after admission he was sent to the x-ray laboratory for an x-ray of the chest, which was a routine procedure, and the films showed a large opacity in the left lung just below the hilus; aside from this, no evidence of chest pathology was seen; a diagnosis of either a lung abscess or a possible carcinoma in the left lung was made and the patient returned to his ward for further observation and study; the extraneous growth in the lung was about the size of a moderate sized cantaloup and as the patient did not have a productive cough nor any elevation of temperature the diagnosis of a lung abscess

did not appear warranted. A few days later he began to show some evidence of meningeal involvement and as tuberculous meningitis was quite common in this hospital it was thought that this must be a case of pulmonary tuberculosis.

A few days later the patient died and the writer was assigned the task of performing the autopsy. The notes made at the time of the autopsy stated a pigmented mole was seen between the shoulders on the back; there was no indication of the mole having been irritated prior to the time of death, and because of this, nothing was seen to indicate that this might in any way have entered into the cause of death. The usual plate from the anterior chest wall was removed and the first thing noted was a large growth in the lower lobe of the left lung which, of course, was the cause of the opaque shadow seen on the x-ray film; this was removed and when incised was found to be filled with a firm pasty mass as black as though it had been colored black; the growth was about the size of a medium-sized cantaloup. Nothing further was needed to make the diagnosis and it was readily understood why, with the opaque shadow, there had been no productive cough; the growth was a metastatic melanotic carcinoma; the autopsy further showed a large melanotic mass surrounding the aorta just above the heart with the mitral valves also badly affected.

So far, nothing had been seen to account for the brain symptoms, so the cap of the skull was removed and the brain taken out. On the first glance nothing was seen to indicate any brain pathology; the various convolutions with the cortex appeared normal; nothing was seen to suggest any affection of the meninges; the brain was incised from the cortex to the basilar portion and here there was seen the beginning metastatic pathology, shown by fine black deposits throughout the basilar portion. Here, then, was the basis for the brain symptoms, as well as confirmation of the metastasis having taken place and sufficient to warrant a diagnosis of death caused by metastatic carcinoma resulting from a pigmented mole located on the posterior portion of the patient's shoulders.

It should be borne in mind that this patient never complained of any pain or discomfort resulting from the mole; if he had there would probably have been a record of its presence and we would not have been so at a loss for a definite pathological cause of the patient's death. Had this been noted, I am sure a definite diagnosis would have been made prior to death, for not many months prior to the admission of this patient to the hospital another patient was admitted and when he came to the x-ray laboratory for the routine x-ray films made on admission I discovered a large pigmented mole on his back and I called this to the attention of the Clinical Director and recommended a request by telegram for transfer to some other hospital authorized to treat this disease, especially where they were equipped to administer deep x-ray therapy; this was done and the patient referred to another large hospital, but in a few days he was returned to our hospital with the statement that we could do as much for him as any one could, which was nothing, and in a short time this patient died. This showed the staff of our hospital the utter uselessness of treatment after metastasis had set in.

Case 2. A white male, aged about 45 years, and a farmer by occupation. Soon after my retirement from government service I was asked to see this patient in company with his family physician for whom I had done much work in former years. He came complaining of some form of stomach trouble which the physician thought might be a gastric ulcer. We gave him the routine barium test meal and made films of the stomach; while turning the patient over

on his face to take one of the films, I discovered a small round scar about three or four cms. in diameter located in the mid-lumbar region posteriorly; upon questioning as to the cause of this scar, he informed me he had suffered with a black mole there which his clothing irritated and at his request a former family physician had removed with an electric cautery. To me, this settled the entire question of the pathology with which the patient was suffering. The gastric films were completed and there was some irregularity seen which I diagnosed as enlarged glands pressing against the wall of the stomach and causing the patient's discomfort. There was also a growth in the left biceps, the anterior portion of the left thigh, in both axillary spaces and in the right inguinal region.

After my former experiences, it will be readily understood why I told the family physician the case was a hopeless one, and one in which we stood totally helpless, and that the patient's days were numbered. Two days later, with the films dry so I could not be mistaken as to what they told, we called the patient in and told him he had a general glandular condition resulting from the mole that had been removed more than a year ago.

He asked what could be done and I was obliged to tell him nothing could be done, so far as we knew. Of course we knew he would seek advice elsewhere, and he did, and in an adjoining city, we learned soon

after, he was trying to be cured by the x-ray, and later on he was in another hospital, but it was all of no avail, and in less than sixty days they carried him out to his long resting place, a victim of A PIGMENTED MOLE.

Of course, we still keep asking ourselves the question, was there nothing we could have done which might have promised at least a reasonable prolongation of this man's life? But our authorities say in their textbooks, and our friends who have had similar cases say, NOTHING.

I have written this brief report, not with the slightest hope of presenting anything that was new, but simply to bring to your attention again this bit of pathology and with the hope that it may stimulate further research and study until some day we shall be able to give these patients who present themselves to us with A PIGMENTED MOLE something in which there may be the glint of hope rather than the darkness of despair.

If I could feel I had even set the smallest effort for such an end in motion, I should feel that I had been more than repaid.

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## THE CONNECTION BETWEEN THE NASAL SINUSES AND CERTAIN EYE LESIONS\*

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The beneficial effect of nasal treatment or nasal surgery on certain eye lesions has been recognized for several years. This has been interpreted as proof that an etiologic relationship exists between some nasal disease or abnormality and the eye condition. An etiologic relationship between the nasal sinuses and some eye conditions is perfectly clear. No one should ponder unduly upon the mode of transmission of infection from the nose to the eye when a purulent conjunctivitis occurs during the course of a suppurative nasal sinusitis. The bacteria may reach the conjunctiva by ascending through the lacrymal apparatus, or the patient may transfer the infection from the nose to the eye with handkerchief or hand. Neither is any obscurity attached to the production of an orbital cellulitis or abscess by a nasal sinusitis. However, other eye lesions can be mentioned which in certain select-

ed cases are attributed to nasal conditions, when the etiologic connection is not so clear. Optic nerve inflammation, paralysis of ocular muscles, intraocular inflammation, such as choroiditis, retinitis, uveitis, vitreous opacities, hemorrhages, etc., are attributed to nasal causes and the exact etiologic *modus operandi* is a subject of much debate and speculation. Many hypotheses and theories have been expounded to explain a nasal etiology. They have all been too fantastic to satisfy a practical mind. Anatomical abnormalities, large widely ramifying sinuses, growths, etc., often explain eye conditions due to obstructed circulation and the consequent lowered resistance. However, in many instances the nasal sinuses, even at operation, appear absolutely normal. In many such cases the eye condition begins to improve immediately after nasal treatment is instituted. Such cases have been reported by reliable men widely distributed over the globe. This fact naturally

\*Read before the Section on Eye, Ear, Nose and Throat, 42nd Annual Meeting, Tulsa, 1934.



brings up the thought that the beneficial effects of nasal treatment or surgery might not necessarily prove that some nasal condition was an etiologic factor.

Theories have been expounded which have to do with some action of the sympathetic nervous system. The vacuum theory of Sluder, more recently studied by the late Dr. Leon White, has also been suggested. To this has been added a speculation on the production of positive pressure in the sinuses and other effects of closed ostia and blocked drainage. Dr. MacKenty of New York has recently studied the bone chips removed at operation meticulously with the aid of a pathologist and reports a low grade osteitis in most cases when satisfactory results were obtained. Few others have done this—at least on such an extensive scale.

The writer does not presume to set forth many new suggestions of any great importance. However, it is the duty of the profession at large to continue the thought and investigation until some satisfactory conclusion is reached. Each man should feel free to express himself on the ideas he has derived from his personal experience when the previous conclusions have been so vague. I have come to a few pet conclusions founded upon the experiences I have had, but they are only tentative.

You will note the title of the paper reads "The Connection Between the Nasal Sinuses and Certain Eye Lesions," thus leaving out a specific definition of any particular type of nasal pathologic condition. The term, nasal sinusitis, was purposely omitted, and especially was suppurative nasal sinusitis avoided, because I am thoroughly convinced and feel free to state that focal infection plays no part in many of these syndromes, symptom complexes, or whatever term one cares to apply to them. When the problem is finally worked out, I believe it will be agreed that the same eye lesion can be produced by more than one condition under certain circumstances. I have mentioned previously that a serious doubt has been forming in the minds of many of us for some time as to whether or not the beneficial effects of nasal treatment in certain eye lesions necessarily determines that the nose played an etiologic role.

Insofar as I have gone into the subject, I wish to outline a few very definite ideas derived as to what eye lesions have been benefited unquestionably by nasal treatment or surgery. The results of na-

sal treatment and surgery in certain types of lesions have been fairly consistent in repeating themselves. I am not so sure about these beneficial effects in some of the other eye lesions. Perhaps they also improved in certain instances after nasal treatment was instituted. However, the improvement was not so spectacular or it was more in line with the improvement that might be expected to occur independent of nasal interference at about the time nasal treatment was begun. For instance, I have had an excellent average of satisfactory results in optic nerve lesions and disturbances in function of the ocular muscles supplied by the nerves coming thru the sphenoidal fissure. Theoretically this is what should be expected and fits the facts as observed in my series of cases. As you know, the sphenoidal fissure transmits the third, fourth, ophthalmic division of the fifth and sixth nerves, also some branches of the sympathetic to the lenticular ganglion. It also contains the ophthalmic vein and the anastomosing lacrymal branch of the orbital artery. These structures swing around the base of the sphenoid coming in very intimate relationship to the sphenoidal and post ethmoidal sinuses. The close relationship of the optic nerve to these sinuses is also too well known to need comment. Practically all of my satisfactory results followed operation or non-surgical treatment of the posterior groups of sinuses. If other groups were also attacked, it probably played no part in the patient's recovery. My results with nasal treatment in such eye lesions as scleritis, choroiditis, vitreous opacities, intraocular hemorrhages, iritis, scleritis and similar conditions have been less definite.

In optic nerve inflammation I have had cases which had been procrastinated with for long periods of time with no improvement, some of them going to more or less complete blindness. Some very spectacular recoveries have followed nasal surgery in many cases and the improvement started so promptly after operation and continued steadily to such complete and permanent recovery that the explanation of the outcome could hardly be in doubt. Other cases were operated on more promptly and the skeptic might say, "perhaps it was merely a coincidence; the operation was happily timed and the condition was about due to improve, anyway." Some of these instances might be so explained, but the law of averages dictate that the percentage

of favorable results was too high for that explanation to hold in all.

One very important point must be stressed: Radical nasal surgery should never be done until all other explanations of the condition have been reasonably well ruled out by a thorough general physical examination. This examination should include xrays of the skull and sinuses with any others indicated by the general physical. A very careful neurological examination must never be omitted, as an intracranial lesion should be definitely ruled out in all optic nerve lesions and ocular muscle palsies. The eyegrounds should be examined and sometimes the fields taken. In other words, all investigations with a view of finding another cause for the trouble should be made prior to operation and not neglected until after, except in a comparatively few instances when the situation is so desperate that taking a long gambling chance seems justifiable.

If all other causes for an optic nerve inflammation or paralysis of an ocular muscle supplied by the nerves coming thru the sphenoidal fissure can be ruled out to a reasonable degree of certainty, then my policy is to open the posterior groups of sinuses regardless of whether or not there is any visible evidence of a nasal pathologic process and even in the face of a negative nasal history. In the intra-ocular diseases mentioned such as choroiditis, retinitis, uveitis, etc., I am not so sure and my tendency is to go very slowly and carefully.

In a few words that is my thesis, I hope my ideas on this subject have been made clear to you. I could spend hours quoting cases and otherwise rambling about the intricate angles of this intensely interesting subject. However, in so doing, the meat of my discourse might become overshadowed and lost.

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## PROPER TIME FOR REMOVAL OF CATARACTS\*

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When a patient comes into the office and is discovered to have a cataract the question arises: Should it be removed, and when? The answer to these questions depends on whether the benefits to be gained offset the inconvenience and hazards of the operation. To be sure, no one ever operated a cataract without a reasonable expectation that a good result could be obtained, but a poor result is well to be kept in mind as a possibility.

First, let us consider the benefits to be obtained. We think first of the person made blind and helpless by the opacity. When a man is blind in one eye and the other eye becomes blinded, there is no question that his cataract should be removed. But there is a large group of cases in which one eye is good but the other eye is cataractous. In this case, also, there are definite advantages to be gained.

It is a great help to restore the field of vision. The difference this can make may be illustrated by placing your closed fist

six inches in front of one eye to obscure central vision and then closing that eye. The usefulness of the outer portions of the field does not depend on the refractive error. Having a blind field beyond the nose on one side allows dangerous objects to approach unnoticed and so is a hazard well to be removed.

Another advantage is in the cosmetic effect. Ladies, especially, are often sensitive of the appearance of the white pupil. Considering the money spent in beauty parlors, even a man can estimate that a woman's looks mean a great deal to her. Not only is the pupil noticeable, but often a monocular cataractous eye will deviate, creating a homely squint. Removing the cataract may prevent the squint formation. Cataracts may be removed in blind eyes for cosmetic reasons alone in some cases.

In traumatic cataracts, when glaucoma develops due to swelling, it may be necessary to remove the lens if other measures fail.

In a child, removal may prevent loss of

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\*Read before the Section on Eye, Ear, Nose and Throat, Annual Meeting, Tulsa, May, 1934.



vision due to non use. In a grown person this may not be a great factor.

Now let us consider when to remove the cataract. Other things being equal, the earlier the operation, in other words, the younger the patient is the more resistance the eye has. Age brings its degenerations in increasing numbers as the years roll by. The arteries harden, the blood pressure rises, rheumatism, arthritis, and nephritis may develop. The patient may have an attack of iritis or iridocyclitis. The lids may droop, chronic catarrhal conjunctivitis and perhaps tear sac disease may develop. As a cataract becomes hypermature and the lens liquefies there is more danger of post-operative glaucoma and iritis due to spilling the lens fluid in the anterior chamber. Also, a hypermature cataract may be found to lie on vitreous which has also become liquid, probably due to the same degenerative process which lead to the cataract in the first place.

Light projection may be good and still fundus changes be present which lead to disappointment. The fibres of the zomule may be stretched to the breaking point and the lens subluxate rendering operation more difficult.

The patient should be in as good health as possible. Bad teeth should be extracted, obviously infected tonsils in the presence of rheumatism should be removed, blood pressure should be reduced to a reasonable level even by blood letting, if necessary. Diabetes and nephritis should be treated. Tear sacs, if infected, should be removed or otherwise treated. Negative cultures should be obtained from the conjunctival sac with the exception that most men pay little attention to a few staphylococci.

Another factor is the economic consideration. If a man is developing a cataract in each eye and it is developing slowly, it will probably be to his advantage to remove it before it is ripe. No doubt it is a better operative risk when ripe, but most men would rather take the added risk than to undergo months or years of economic helplessness. If it is possible to do an intracapsular operation, the result is just as good early as late.

There is one disadvantage to the removal of cataract when the other eye is still serviceable. The two eyes do not work well together. Even though each eye may have normal vision with a lens correcting

the operated eye, the difference in the size of the image prevents fusion. I have seen it stated that in some cases fusion is possible in this case, but it is certainly rare. Intelligent patients soon learn to disregard or suppress the less distinct image. Usually the operated eye is not fitted with a glass, making the suppression easier. Nevertheless, a number of patients complain of the confusion and continue to ask why a glass is not fitted, why he is bothered by the operated eye, and make the operator miserable by their complaints, no matter how patiently he explains time after time. Cataract patients, due to their age and state of health, are often difficult to please in any case.

I believe it is our duty to do the best thing for our patient, even though he does turn out to be a complainer. The relatives will probably understand, even if he cannot.

#### CONCLUSIONS

1. It is best to remove a unilateral ripe cataract, even if the other eye is good.
2. It is best to remove any ripe cataract as soon as health permits.
3. It is best to remove an unripe cataract when helplessness sets in.

#### DISCUSSION—A. W. Roth, Tulsa:

This very timely paper on so important a subject covers the ground fully and does not leave much for discussion. I only wish to emphasize some of the doctor's points. After fully considering the case you reach a conclusion—to operate or not to operate.

Dr. Cooper covers the subject in one sentence: "The answer to these questions depends on whether the benefits to be gained offset the inconvenience and hazards of the operation." Surely, the early operation is desirable in operable cases, shortening the period of disability and offering the best chance for improvement.

Cataracts are the normal biological phenomenon of old age, therefore we expect them to progress with increasing age. The advancing age increases the hazards.

The new lens fiber which are constantly forming proves that the lens is a living structure with definite metabolic needs; this process offers some hope for older persons who are not operable. Sometime we can stop further development of the cataract and really improve the vision by local and internal medication.

## ELECTROCOAGULATION IN RHINOPHARYNGOLOGY\*

MARVIN D. HENLEY, M.D.  
TULSA

The object of this short manuscript is to point out briefly some of the faults or errors as well as the feasibilities of diathermy in the work of the rhinopharyngologist. We will not concern ourselves nor bore you with the manner in which the different currents are produced but will evaluate their effects in different nose and throat conditions.

It is not within the province of this discussion, nor will time permit us to go into the physics of the high frequency currents, but a brief historical review will not be amiss.

D'Arsonval,<sup>2</sup> Professor of Physics in the College of France, was the first to show, in 1890, that when alternating electric currents used to stimulate muscle contractions were increased in frequency to 5,000 and more per second, these contractions became feebler and finally ceased altogether. In February, 1891, he reported that he was able to pass high frequency currents through his own body with no reaction and no other sensation than warmth. The frequencies of the current used at present for surgical purposes are from 500,000 to 3,000,000 per second.

Electrosurgery<sup>3</sup> came on the surgical horizon about 1907 as an outcome of the epoch making experiments of D'Arsonval and Oudin. Nagleschmidt and Doyen were the first to apply these currents to any great extent to medical and surgical conditions and reported their results early in 1907 and 1909, respectively. The present efficient form of electrosurgery in this country, and largely in the world, is due to William L. Clark of Philadelphia, who took it over in a crude state and brought it to the borders of perfection. Addenda have been largely due to technical developments by electrical specialists, responding to stated needs of surgeons.

The electrodesiccating<sup>4</sup> current is known as the (oodan) Oudin current and formerly was called the fulgurating current. Its action is dehydration of the surface of tissues by showers of sparks from a single, usually sharp pointed electrode. More scar

tissue follows its use than that of the D'Arsonval current.

The electrocoagulation<sup>5</sup> of D'Arsonval current and the more powerful cutting current are both dependent upon the use of two electrodes, a large indifferent electrode, usually a thin sheet of lead about eight inches by twelve inches in size, and a small active electrode which may vary in size from a large darning needle to a small sewing needle.

The small amount<sup>6</sup> of heat produced in the region of the large electrode is quickly dissipated by the blood stream, but the large amount of heat about the region of the small electrode, which is usually inserted into the tissues about one-fourth of an inch, causes the tissue to coagulate to greater or lesser depth, depending upon the strength of the current and length of time of application.

The demand<sup>7</sup> for electrosurgery arose from imperfection in the established surgical technique, long accepted as inherent in operative methods, and therefore, hardly realized until the new agent and the acquired facility necessary to its skillful application appeared to remedy these.

That electrosurgery<sup>1</sup> has been accepted as an important acquisition by the general surgeon, and by many working in special fields of surgery, is attested by the prominence given it at the Clinical Congress of the American College of Surgeons in Philadelphia in 1930. During a conference at that time no less than eleven monographs were presented by surgeons of note.

Harvey Cushing of Boston, is opening up a wide field for electrosurgery in brain and neural surgery and Walter E. Dandy of Johns Hopkins is advancing on similar lines. Many leading urologists and gynecologists have been using diathermy in the treatment of bladder conditions and for cervical conization.

In spite<sup>8</sup> of the appearance in the literature of the past several years of many articles on this subject pertaining to our special field, comparatively few rhinopharyngologists have embraced this valu-

\*Read before the Section on Eye, Ear, Nose and Throat, Annual Meeting, Tulsa, May, 1934.



able measure. If the general surgeon, the gynecologist, the brain surgeon and the urologist put it in a class with the knife, radium, X-ray, is it not incumbent upon the rhinopharyngologist to make a thorough study of the principles involved in the use of the several different types of high frequency currents, in order that he may properly evaluate the effects and may apply the type best suited to his needs?

After<sup>1</sup> an experience of six or seven years your essayist is convinced that there is a real place in our specialty for this valuable adjunct to surgery, but while in selected cases we have found it the method of choice, we are far from willing to follow those enthusiasts who relegate long accepted surgical methods entirely to the past in some fields of our endeavor—notably in the removal of tonsils. There is a concurrence of opinion that this method cannot replace the ordinary surgical method of removal of tonsils.

Even<sup>2</sup> though you have developed an exacting technique for the orthodox surgical removal of tonsils, it is far from adequate under all conditions. The caprice of the tonsil is phenomenal. The tonsil question continues to be in a peculiar strategic position.

It<sup>3</sup> is generally agreed that there are conditions over which we have no control. One may perform a perfect tonsillectomy, leaving a clean tonsillar fossae. At a subsequent time, granulation tissue, lymphoid hypertrophy, unremoved or regenerated tonsillar tissue may be seen in the fossae. This may be the exceptional case but it is far too frequent. Recently, Rhoads and Dick, in the routine physical examination of nurses entering training at the Presbyterian and Cook County Hospitals found the tonsils to have been incompletely removed in 294 of 403 who had had a tonsillectomy, or 73 per cent.

It would seem from a recent publication of an English throat and ear journal that diathermy is there much more extensively used than in this country, as Norrie details the use of diathermy in the following conditions: Nose bleed, spurs, synechia, cellular middle turbinate, enlarged posterior ends, ethmoid region, maxillary antrum, middle meatus approach, inferior meatus approach, frontal sinus, vacuum frontal headache (by treating or coagulating the anterior end of the middle turbinate), a sphenoid, removal of tonsils, crypt abscesses, lingual tonsil, enlarged uvula, adenoids and conditions in the ear.

Electrocoagulation<sup>4</sup> has been used with

varied degrees of success and failure in other conditions in this country such as: Chronic tuberculosis, malignant tumors of the pharynx and larynx (Novak), pseudo hemangionia (Novak), adhesions, various fungus affections of the tonsils, in cases presenting blood dyscrasias such as hemophilia and anemias, protracted coagulation of the blood, various general conditions accompanied by serious involvement of the heart, lungs and kidneys, other general diseases such as syphilis, arthritis, and those cases with marked sclerotic changes and the aged and infirm.

The condition<sup>7</sup> of infection in the lymph tissue about the eustachian tube and *on the pharyngeal wall* has long been recognized in infection and catarrh of the middle ear and the oldest method used to correct the condition was to break down the adhesions with the finger, assuming that the infected lymph tissue would take care of itself; later the Holmes or Yankauer nasopharyngoscope was used, the method was to pick or bite out the lymph tissue with forceps. This method usually tended to increase the adhesions and hence to make the condition worse rather than better.

A slow coagulation<sup>7</sup> which produces a white spot, four to five millimeters around the needle, and about one millimeter beyond the point is the aim of the manipulation in about two seconds time. This procedure is carried out to all lymph follicles. In the region of the eustachian tube a nasopharyngoscope should be used, while in eradicating the lymphoid tissue from the pharyngeal wall this is not necessary. Coagulation of the lymphoid tissue below the tube must be done especially carefully or the result may be a paralysis of the levator veli muscle. It takes from ten to fourteen days for the slough to disappear and about four weeks before healing is complete.

The cautery is altogether unsatisfactory, and radium and X-ray are relatively inefficient procedures compared with diathermy. The use of local measures such as suction or the application of various solutions is certainly a futile gesture. Therefore, one must look upon the development of this method of destroying tonsil tissue as a useful addition to the surgical resources of the laryngologist.

Electrosurgery and especially electrocoagulation as here considered is weathering the situation of adverse criticism. No doubt,<sup>8</sup> the controversy that exists today is in no small part due to the disrepute entailed by the employment of elec-

trosurgery by the so-called unethical and irregular practitioners.

Manufacturers<sup>o</sup> of devices for this type of work have, with usual commercial solicitude for disposing of the greatest amount of apparatus possible, offered three-day courses to general practitioners, who have then considered themselves competent to undertake, particularly electrosurgical removal of the tonsils. Unless they have a thorough understanding of the structure of the throat, of pathologic changes incident to removal of the tonsils, and of the possible complications associated with the electrosurgical method, the patients are likely to suffer. The unreasoning and unscientific promotion of this method not only by manufacturers but by some writers on health subjects for the lay press has done incalculable harm.

After<sup>a</sup> a complete tonsillectomy a pharyngeal lymphoid hyperplasia occurs not infrequently. These lymphoid excrescences are found in the tonsil fossae, at the margins of the pillars and at the base of the fossae. It is possible to destroy these lymphoid masses with electrodesiccation or electrocoagulation. The monoterminal current is used. The needle is introduced superficially into the follicle which is subjected to a momentary action of the current. The patient experiences practically no discomfort.

Following tonsillectomy many cases are found with masses of lymphoid tissue at the base of the fossae. It is possible to destroy this tissue by electrodesiccation. The technique is not difficult and the patient experiences very little reaction. The tissue is usually extracapsular lymphoid tissue, and strictly speaking, should not be regarded as true palatine tonsillar remnant.

The question of detailed technique in any one procedure has been purposely avoided because this can be obtained at your leisure from numerous publications. If, as Chevalier Jackson has said, the operator will keep in mind the fact that when he purchases armamentarium he does not purchase the skill for its proper use, there will be much less disappointing results obtained by diathermy in the field of otolaryngology.

Much has been written concerning the absence of pain and bleeding in the use of electrocoagulation. It has been my experience, particularly in the tonsillar fossae and on the pharynx, that the bleeding if any, is negligible but that pain even though absent at the time of manipulation,

occurs later if sufficient destruction has been produced to obtain the desired result.

This is taking into consideration the fact that it is impossible to hurry the eradication of superfluous lymphoid tissue and that the patient may necessarily be subjected to several treatments.

#### SUMMARY

1. No method yet devised has been proven perfect for the removal of tonsils but the use of electrosurgery in conjunction with the orthodox surgical removal of tonsils approaches that state.

2. In regard to the tonsil situation the advent of electrosurgery in no way replaces the classical surgical removal of tonsils; it is a valuable adjunct to the throat surgeon.

3. The proficient otolaryngologist should be prepared to use this in chosen cases and not regard it as a thoughtless innovation.

4. It is the method of choice to effectively remove infected lymphoid tissue remaining in the tonsillar fossae and adjacent thereto after surgical removal of tonsils.

5. It is the method par excellence that will permanently dispose of infected lymph follicles on the pharyngeal wall.

6. In conclusion,<sup>2</sup> we believe that, owing to its safety in trained hands, the absence of shock and comparatively slight pain and reaction following its use, as well as its economic advantages, the value of electrosurgery in rhinopharyngology will be more widely recognized and it will be more extensively used as time goes on.

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# President's Page

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Medical Arts Building  
OKLAHOMA CITY

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## TO THE MEDICAL PROFESSION OF OKLAHOMA

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The Basic Science Bill will probably be introduced in the legislature within a short time. It is very clear that the principal objection to it will come from irregular practitioners. That being true, we, as regular practitioners of medicine, should take a reasonable and sensible position with reference to our attitude toward irregular practitioners.

If it is true, as I am told that it is, that regular physicians, and even members of the State Medical Association, sometimes consult with osteopaths and chiropractors in certain localities of the state, then one can very readily see how difficult it is for the average citizen, including the average member of the legislature, to make a distinction between the regular practitioner and the irregular practitioner. If we do not believe in the theories and the doings of the irregular practitioners, then we ought not to consult with them. When we consult with them we are definitely placing ourselves upon the level upon which they stand, and are just as definitely abandoning the level upon which we ought to stand. When we consult with them we are stultifying ourselves and the profession to which we belong, and, at the same time we are giving strength and comfort to those who are not willing to support what we believe to be fundamental requirements looking to the safety and welfare of those in need of honest and efficient service when they are sick.

Now and again somebody suggests that it would be a good thing to compromise. In the very nature of things, there can be no compromise. Compromises cannot be made if principles are to be preserved. The medical profession does not compromise with its own members. Every year it is harder and harder still for the regular physician to meet professional requirements. Surely there is no reason on his part to compromise in any way with

those who do not believe in such requirements.

In my judgment, the legislature will enact the Basic Science Bill if the members of the legislature are properly informed about it—and every member of the legislature may be properly informed by some member of the State Medical Association. Those of us who have acquaintances and friends in the legislature ought to go to them and talk to them about the principles involved in the bill. Not that only, but we should communicate with them from time to time by letter, telephone, or telegraph, calling attention to our interest in the bill. Naturally, the member of the legislature who has not been informed about the bill will not take any particular interest in it, but if one of his friends in the medical profession, or, better, if a number of his friends in the medical profession will take the trouble and pains to communicate with him occasionally in behalf of the bill, it is a perfectly reasonable conclusion that that member of the legislature will at least think about it in a serious way. Regardless of the quips and pleasantries at the expense of members of the legislature, it is my firm belief, based upon some little personal experience, that, by and large, they are sensible and reasonable men. Obviously, they will not take any particular interest in things that do not concern them or their constituents, or in things in which they have not been advised. It is just as obvious that they will take an interest in matters about which their constituents are concerned, and since this bill has to do with the preservation of health and the prevention and cure of the diseases and abnormalities of human beings, they will take an interest in it when they really know the motive behind the activity of the medical profession in favor of such legislation.

Another matter of interest to the profession is the attitude of the Governor of the state in connection with the appointment of a Commissioner of Health. About the middle of December word came to the writer that Governor Marland would consider a group of three or more recommended by the State Medical Association. Since the State Association can speak authoritatively only through the Council, a meeting of the Council was arranged for December 27, 1934. The meeting was held at Oklahoma and University Club, Oklahoma City. With one exception, all the members of the Council were present.

The first thing that the Council did, after accepting the responsibility of making recommendations, was to lay down the rule that no physician would be considered who was not prepared in both a technical and practical way. A number of names were considered in an orderly manner. The final result of the deliberation of the Council was the recommendation of a group of four. This list of names, accompanied by the qualifications of each member of the list, as determined by the Council, was sent to the Governor by registered mail, and we were advised of its receipt the day it reached his office.

After the meeting of the Council there were individual suggestions that one or two other names be added to the list. Manifestly, this could not be done authoritatively without first taking it before the Council in a formal way, and it was not deemed wise to do that for the particular reason that such action would probably be interpreted as indicating vacillation on the part of the medical profession of the state. An additional reason was that the action of the Governor had been given wide publicity through the newspapers of the state for a number of days before the meeting of the Council.

It is believed that this is the first time that the medical profession of the State of Oklahoma has been so distinctly recognized by the Governor of the state touching an appointive position. That being true, the State Medical Association should be frank, explicit and honest in its proceedings. Moreover, the members of the medical profession of this state should unite upon principles, and render every proper service in assisting in the establishment of a stable and efficient State Department of Health.

## OPHTHALMOLOGY AND THE DISPENSING OPTICIAN

The view that examination of the eyes by a dispensing optician or optometrist is inadequate and usually uneconomical has been often expressed. Recently Harman<sup>1</sup> in England has employed the statistical method in attempting to determine the truth or falsity of this opinion. A number of ophthalmic practitioners, working in different parts of England, who were accustomed to seeing patients through the National Ophthalmic Treatment Board, were asked to keep records of the patients examined by them. To enable the records to be compared, cards were issued to these physicians, outlining the classification to be followed and the manner of entering the returns.

The report is based on 10,085 such cases recorded by forty-seven ophthalmic practitioners. Sixty-four per cent of the 10,000 cases showed errors of refraction only. Twenty-nine per cent showed errors of refraction plus one or more "other eye conditions." Nearly 6 per cent showed no errors of refraction but did present one or more "other eye conditions," and 1 per cent showed no appreciable eye defects. Thus, omitting those patients with errors of refraction only and those having no appreciable eye defects, 35 per cent of the patients seen required attention in addition to or other than the provision of glasses.

A partial check on these observations is provided by a still larger group of patients. Certain factors of all the cases seen through the National Ophthalmic Treatment Board are recorded and filed. One of these factors shows how many patients are reported by the ophthalmic medical practitioners as not requiring glasses. From this source 68,044 patients who were seen by 821 physicians were analyzed. Slightly more than 6 per cent did not require glasses, as contrasted with 6.75 per cent in the other more detailed analysis.

Comparative figures on patients seen by dispensing opticians were difficult to obtain. Harman sought to determine what proportion of cases seen by opticians were similarly reported and referred to ophthalmologists for further study. Judging from the statistical inquiry noted, adequate optician examination should result in the referring to medical men of about 35 per cent of all patients seen, as the opticians admit only the ability to prescribe glasses for difficulties of refraction. Eventually actual figures of referred cases during 1933 or 1933-1934 were supplied by certain approved societies representing several million insured persons. In these returns the percentage of cases referred by the sight-testing opticians to ophthalmic surgeons ranges from 1 to 4.6, with an average of 3. The comparison is striking. In the series of patients examined by ophthalmic surgeons, 29 per cent proved to be other than errors of refraction alone, and nearly 6 per cent had other eye conditions without errors of refraction, yet only 3 per cent of the patients seen by opticians were referred for further examination.

"The conclusion," Harman says, "is irresistible. The opticians did not recognize the defects present in the eyes of the patients seen by them, or if they did recognize them they did not report them for medical examination. The corollary is this: Patients who go to opticians to have their sight tested do not get what they ought to get. Such a finding is conclusive of the proposition that an examination by an optician is uneconomical, and conversely that approved societies or others who are responsible for advising patients to seek eye examination cannot in the interests of these persons do other than adopt the only economical method—that is, by securing examination by competent ophthalmic medical practitioners."



# THE JOURNAL

OF THE

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Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, 203 Ainsworth Building, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

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## EDITORIAL

### THE JOURNAL

A careful perusal of the minutes of both the Indian Territory and Oklahoma Territory Societies indicates that the Indian Territory Medical Society had its first meeting in 1881. There is then a lapse of seven years before any further minutes can be found. The next regular meeting was in 1889. Following this meeting the organization seemed to have been perfected and there were one or two meetings each year until the time of the amalgamation.

In 1893 the Oklahoma Territory Medical Society was established, but in looking over the minutes of the proceedings of the House of Delegates and Council I

find no reference to any publication until the minutes of the May meeting, 1904; at this time the Oklahoma Medical News Journal, then published by Dr. Phelan, Oklahoma City, was made the official organ of the Oklahoma Territory Society. A committee was appointed to censor the material appearing in the Journal and it would appear that their territorial society had control of the Journal except from a business standpoint.

The present Journal was authorized at a meeting of the Oklahoma State Medical Association in 1907 and I quote from the minutes of the meeting of the House of Delegates, May 12, 1908:

"That in accordance with the decision of the House of Delegates at the last meeting at Shawnee, a Medical Journal be established, to be known as The Journal of the Oklahoma State Medical Association, the first issue to come out about June 1, 1908, and the Secretary, Dr. E. O. Barker, shall edit this issue, under the supervision of the Council, and the expenses to be paid out of the fund of the same. That the Secretary be allowed the sum of \$50 for the work of getting out the first issue. We also recommend that the Secretary be the editor of the Journal and that he be supplied with a stenographer as necessity demands."

The first issue of the Journal presented three papers, the first being the President's Address, by Dr. C. S. Bobo; the second, "The Surgical Prostate," by Dr. Horace Reed; and the third, "Periodical Headaches," by Dr. J. M. Postelle. The entire scientific material appearing in this issue amounted to about sixteen pages. There was a slight increase in the size of the Journal from time to time—the editorial policy being very high class under the supervision of Dr. Barker.

In 1909 Dr. C. A. Thompson was elected Secretary-Treasurer-Editor. He immediately revamped the style of the Journal considerably, adding to the scientific material and developing the editorial department.

We have in the library of the Secretary of the State Association a complete bound file of the Journals since its first publication in 1908, and there is some very interesting reading, especially to some of us older members who have been connected with organized medicine here in the state.

Since the Journal was turned over to me with the November, 1933, issue, I have

of course made no radical changes; the income from advertising does not pay for the cost of publication, but we have had during the past year and a half several new national advertisers. All of this material is received by us through the Co-operative Medical Advertising Bureau of the American Medical Association. In a recent report from the director of this bureau I am informed that our increase in national advertising is about six pages, and he further states that he believes this increase is due, in a large measure, to the improved appearance of the Journal, which has made it more desirable to advertisers.

During the depression the income from advertising has steadily decreased from \$2000 to \$3000 each year. This will, of course, make it necessary, if we expect to maintain the standard of the Journal, to probably use some of the money the association has been able to save. I have no inclination to allow the standard of the Journal to diminish during the time I may be responsible for its editorship.

The one great contribution that the membership can make to the success of the Journal is reading of the advertising material and then mention of the Journal in answering advertisements. If the Journal is to retain or increase its income from advertising we must patronize the firms that spend their money with us. Some of our advertisers keep a very careful check by the coupon method or the offer of free samples and literature. In the current issue Phillip Morris Cigarettes are using the coupon method and I sincerely hope that they will receive a liberal response from our readers. Just clip the coupon, send it in and thereby not only help the Journal but receive two packages of good cigarettes.

Just remember that were it not for the revenue received from advertising we could not afford to publish a Journal—then by your interest proceed to show the advertiser that he is getting his money's worth.

Some recent improvements include a cover page of heavier material, making it more substantial and more easily preserved. You will now find the physicians' cards properly classified, making it easier to find a doctor who is doing the special line of work you may require. As we have at this time a president whose writings we greatly admire, I have added a President's Page.

The editorial section has and will deal largely with matters of policy and I am quite careful to present nothing of major importance until I have the opinion of either the Council or House of Delegates—of one thing you may always be assured, that there will be no compromise with any element that will tend in any way to embarrass organized medicine in Oklahoma.

This Journal is the mouthpiece of organized medicine; it is not, however, a place where individual opinions can well be published. The scientific department is open to the membership. I know that some articles have been severely criticized, and some of them have statements that vary with recognized practices; however, when these papers are accepted in one of the sections at the state meeting, I feel that they are entitled to publication, for usually any grave mistakes on the part of the essayist are corrected in the discussion, I have been criticized for the publication of papers from authorities from outside the state—in fact, I received a severe criticism from a man who did not sign his name, for the publication of a paper on "Diabetes," by Dr. Seale Harris, of Birmingham, in spite of the fact that the paper was presented at the general meeting in Oklahoma City.

I am submitting this general statement relative to the Journal believing that as it is your property you will not only be interested but will put into practice some of the suggestions made, especially those relative to recognition and patronage of our advertisers.

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## BASIC SCIENCE LAW

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In this issue of the Journal you will find published the proposed Basic Science law. This bill will be introduced as published in the Journal and the Committee on Public Policy and Legislation thinks that it is important for each member of the State Medical Association to familiarize himself with this bill so that he may intelligently discuss it with the members of the Senate and House from your respective districts, for their approval will depend largely upon how well they understand this proposed legislation.

Make it a point to understand this bill yourself and then communicate your impressions to the law makers of your county.



## PROPOSED BASIC SCIENCE LAW

An Act Relating to the Practice of the Healing Art in the State of Oklahoma, Prescribing Certain Penalties for Violation Thereof, Establishing a State Board of Examiners in the Basic Sciences Underlying the Practice of the Healing Art, Providing for the Organization and Powers of Said Board and Making Certification Thereby a Prerequisite to Eligibility for Examination for License to Practice Any Branch of the Healing Art, Defining the Healing Art, Excepting Certain Professions and Persons From the Provisions of Said Act, and Declaring An Emergency.

Be It Enacted by the People of the State of Oklahoma:

Section 1. No person shall be permitted to take an examination for a license to practice the healing art or any branch thereof, or be granted any such license, unless he has presented to the board or officer empowered to issue such a license as the applicant seeks, a certificate of ability in anatomy, physiology, chemistry, bacteriology, and pathology (hereinafter referred to as the basic sciences), issued by the State Board of Examiners in the basic sciences.

Section 2. For the purposes of this Act, the healing art includes any system, treatment, operation, diagnosis, prescription, or practice for the ascertainment, cure, relief, palliation, adjustment, or correction of any human disease, ailment, deformity, injury, or unhealthy or abnormal physical or mental condition.

Section 3. The Governor, within thirty days after this Act takes effect, shall appoint a State Board of Examiners in the basic sciences (hereinafter referred to as the Board), consisting of five members. The members of said Board shall be appointed one for one year, one for two years, one for three years, one for four years, and one for five years, from the dates of their respective appointments. On the expiration of the term of any member, the Governor shall fill the vacancy by appointment for a term of five years. On the death, resignation, or removal of any member, the Governor shall fill the vacancy by appointment for the unexpired portion of the term. Every member shall serve until his successor is appointed and qualified. The members of the Board shall be selected because of their knowledge of the basic sciences aforesaid, and each shall be a professor, assistant or associate professor or an instructor on the faculty of the State University, the State Agricultural College, or some other state institution of learning in the State of Oklahoma. Each member shall have resided in Oklahoma not less than one year next preceding his appointment. No member of the Board shall be actively engaged in the practice of the healing art or of any branch thereof.

Section 4. The Board shall organize as soon as practicable after its appointment. It shall have authority to elect officers, to adopt a seal, and to make such rules as it deems expedient to carry this Act into effect. The Board shall keep a record of its proceedings, which shall be prima facie evidence of all matters contained therein. Every member shall receive Ten (\$10.00) Dollars per diem and actual expenses, when actively engaged in the discharge of his statutory duties. The compensation of the members and the said expenses of the Board shall be paid out of the fees received from applicants, but this is not to be construed as preventing appropriations to cover deficits. The treasurer of the Board shall give such bond, running in favor of the state, in such an amount

and with such conditions as the state treasurer may prescribe. The office of the Board shall be in Oklahoma City, Oklahoma, and quarters therefor in the State Capitol building or in some other building assigned thereto by the State Board of Public Affairs.

Section 5. The fee for examination by the Board shall be Fifteen (\$15.00) Dollars. The fee for re-examination within any twelve month period after a failure to pass the original examination shall be Ten (\$10.00) Dollars, but the fee for re-examination after the expiration of said twelve months shall be the same as the original fee. The fee for the issuance of a certificate by authority of reciprocity, on the basis of qualifications as determined by the proper agency of some other State, Territory, or the District of Columbia shall be Fifty (\$50.00) Dollars. All fees shall be paid to the Board by the applicant when he files his application. The Board shall pay all moneys received as fees into the state treasury, to be placed in a special fund to the credit of the Board designated "The Basic Science Fund." The state treasurer shall pay out of such fund all expenses incurred by the Board, on vouchers signed by the president and the secretary of the Board.

Section 6. The Board shall conduct examinations twice a year and at such other times and places as it deems best. Every applicant, except as hereinafter provided, shall be examined to determine his knowledge, ability, and skill in the basic sciences. The examinations shall be conducted in writing, but may be supplemented by oral examinations. If the applicant receives a credit of 70 per cent or more in each of the basic sciences, he shall be considered as having passed the examination. If the applicant receives less than 70 per cent in one subject and receives 70 per cent or more in each of the remaining subjects, he shall be allowed a re-examination at the examination next ensuing, on application therefor and the payment of the prescribed fee and he shall be required to be re-examined only in the subject in which he received a rating less than 70 per cent. If the applicant receives less than 70 per cent in more than one subject, he shall not be re-examined unless he presents proof, satisfactory to the Board, of additional study in the basic sciences sufficient to justify re-examination.

Section 7. No certificate shall be issued by the Board unless the person applying for it submits evidence, satisfactory to the Board: (1) that he is not less than nineteen years old; (2) that he is a person of good moral character; (3) that before he began the study of the healing art he was graduated by a high school accredited by the University of Oklahoma or a school of similar grade, or that he possesses educational qualifications equivalent to those required for graduation by such an accredited high school; and (4) that he has a comprehensive knowledge of the basic sciences as shown by his passing the examination given by the Board, as by this Act required. This shall not be construed to prevent the issuance of certificates under the provisions of Section 8 of this Act.

Section 8-A. The Board may in its discrimination waive the examination required by Section 7, when proof satisfactory to the Board is submitted, showing (1) that the applicant has passed in another state an examination in the basic sciences either before a Board of Examiners in the basic sciences or before a State Board authorized to issue licenses to practice the healing art; (2) that the requirements of that state are not less than those required by this Act as a condition precedent to the issue of a certificate; and (3) that the Board of Examiners in the basic sciences

in that state grants like exemption from examination in the basic sciences to persons holding certificates from the State Board of Examiners in the basic sciences of Oklahoma or holding licenses to practice the healing art according to the method or school that the applicant proposes to follow, issued after examination by the proper licensing Board of Oklahoma.

Section 8-B. The applicant receiving such certificate as heretofore provided, either by examination or reciprocity, shall register such certificate with the Secretary of State, State Capitol Building, Oklahoma City, Oklahoma.

Section 9. Any person aggrieved by any action of the Board may appeal to the District Court of Oklahoma County, Oklahoma. Such appeal shall be taken by serving on the secretary of the Board a notice of appeal, stating the action from which the appeal is taken and, if the appeal is from an order of the Board, stating such order or the part thereof from which the appeal is taken, and filing with the secretary of the Board a bond in the sum of Five Hundred Dollars (\$500.00), conditioned for the payment of all costs of the appeal and all damages sustained by any person because of the appellant's failure to comply with the terms of the action or order of the Board, if such action or order be held to be legal and valid. On the filing and approval of such bond, the action or order, or the part thereof appealed from, shall be stayed pending the final determination of the controversy. Immediately on the perfecting of such appeal the secretary of the Board shall transmit to the clerk of the court of such county the notice of the appeal and the bond, and a certified copy of all proceedings of the Board relating to the action or order from which the appeal is taken; and such cause shall thereupon stand for trial at the first regular term of the court thereafter.

Section 10. Any basic science certificate and any license to practice the healing art or any branch thereof, issued contrary to this Act, is void. Any licensing board which has issued a license on the basis of a void basic science certificate shall revoke or cancel that license. The procedure for such revocation or cancellation shall be in accordance with the provisions of the act under which such license was issued, authorizing the cancellation or revocation of licenses generally. The certificate issued to any person by the State Board of Examiners in the basic sciences shall be revoked automatically by the revocation of his license to practice the healing art of any branch thereof.

Section 11. Any person who practices the healing art or any branch thereof without having obtained a valid certificate from the State Board of Examiners in the basic sciences, except as otherwise authorized by this Act, shall be guilty of a misdemeanor and punished by a fine of not more than \$500.00, or by imprisonment in the county jail for not more than six months, or both, in the discretion of the court.

Section 12. Any person who obtains or attempts to obtain a basic science certificate by dishonest or fraudulent means, or who forges, counterfeits, or fraudulently alters any such certificate shall be guilty of a felony and shall be punished by a fine of not more than One Thousand (\$1,000.00) Dollars, or by imprisonment in the state penitentiary for not more than one year, or both, in the discretion of the court.

Section 13. Any person who obtains or attempts to obtain a license to practice the healing art or any branch thereof from any board or officer authorized

to issue any such license, without presenting to said Board or officer a valid certificate issued to the applicant by the State Board of Examiners in the basic sciences, as in this Act required, shall be guilty of a misdemeanor and punished by a fine of not more than Five Hundred (\$500.00) Dollars, or by imprisonment in the county jail for not more than six months, or both, in the discretion of the court.

Section 14. Any person who knowingly issues or participates in the issue of a license to practice the healing art or any branch thereof (1) to any person who has not presented to the licensing Board a valid certificate from the State Board of Examiners in the basic sciences or (2) to any person who has presented to such licensing Board a certificate obtained from the State Board of Examiners in the basic sciences by dishonesty or fraud, or by any forged or counterfeited certificate, shall be guilty of a misdemeanor and be punished by a fine of not more than Five Hundred (\$500.00) Dollars, or by imprisonment in the county jail for not more than six months, or both, in the discretion of the court.

Section 15. A person who has paid money or anything of value to a person not authorized to practice the healing art or a branch thereof, as compensation for services rendered in the practice of the healing art or a branch thereof, when the payer did not know at the time of payment that the payee was neither the holder of a certificate issued by the State Board of Examiners in the basic sciences nor authorized to practice without such a certificate, may recover such money or the value of the thing paid, by an action at law instituted within two years from the date of payment.

Section 16. The State Board of Examiners in the basic sciences and the several boards authorized to issue licenses to practice the healing art and branches thereof shall investigate every supposed violation of this Act coming within the scope of the authority of such Boards, respectively, and report to the county attorney of the county in which such violation occurs all cases that in the judgment of the Board warrants prosecution. Every police officer, sheriff, and peace officer shall investigate every supposed violation of this Act that comes to his notice or of which he has received complaint and apprehend and arrest all violators. It shall be the duty of the Attorney General to aid the several county attorneys in the prosecution of violations of this Act.

Section 17. This Act shall not be construed as applying to dentists, pharmacists, nurses, optometrists, and chiropidists, practicing within the limits of their respective callings; nor to persons treating human ailments by prayer or spiritual means, as an exercise or enjoyment of religious freedom: Provided, that the laws, rules, and regulations relating to communicable and infectious diseases and sanitary matters are not violated; nor to persons licensed to practice the healing art or any branch thereof in Oklahoma when this Act takes effect.

Section 18. Nothing in this Act shall be construed as repealing any statutory provision in force at the time of its passage with reference to the requirements governing the issue of licenses to practice the healing art or any branch thereof or as in any way lessening such requirements. But any Board authorized to issue licenses to practice the healing art or any branch thereof may in its discretion either accept certificates issued by the Oklahoma Board of Examiners in the basic sciences in lieu of examining the certificants in such sciences or it may examine such certificants in such sciences. The unconstitutionality of any part



of this Act shall not be construed as invalidating any other separable part of it.

Section 19. This Act may be cited as Basic Science Act, 1935.

Section 20. All Acts and parts of Acts contrary to the provisions of this Act or inconsistent therewith are hereby repealed.

Section 21. It being immediately necessary for the preservation of the public peace, health and safety, an emergency is hereby declared to exist, by reason whereof this Act shall take effect and be in full force from and after its passage and approval.

### **Editorial Notes—Personal and General**

DR. E. B. DUNLAP, Lawton, who has been ill for the past two weeks is reported improved.

DR. and MRS. D. W. CONNOLLY, formerly of Nashoba, have moved to Antlers where Dr. Connolly will resume practice.

DR. J. C. BUSHYHEAD, Claremore, is reported recovering from an automobile accident in which he sustained minor injuries.

DR. H. A. ANGUS, Lawton, active civic worker, was selected as the most useful Lawton Kiwanian of 1934, at the club's meeting in January.

DR. and MRS. D. J. HERRINGTON, Cushing, spent three weeks in New Orleans in January, where Dr. Herrington did post-graduate work at Tulane University.

DR. McLAIN ROGERS, Clinton, was named vice-president of the Central Oklahoma Boy Scout Council at the organization's annual meeting held in January in Oklahoma City.

DR. AND MRS. RALPH BOWEN, Oklahoma City, are visiting in Europe. Dr. Bowen expects to spend most of his time in London where he will do some special work in pediatric allergy.

ST. JOHN'S HOSPITAL, Tulsa, held their annual staff meeting January 21, 1935, and the following officers were elected:

President—Dr. Samuel Goodman.  
Vice-President—Dr. N. S. White.  
Secretary—Dr. J. E. McDonald.

### **News of the County Medical Societies**

WASHITA County Medical Society met in Cordell in January and the following officers were elected for 1935:

President—Dr. J. F. McMurray, Sentinel.  
Vice-President—Dr. J. P. Jones, Dill.  
Secretary-Treasurer—Dr. E. K. Copeland, Cordell.  
Delegate to the State Convention—Dr. D. W. Bennett, Sentinel.

OKMULGEE County Medical Society elected the

following officers for 1935 at their meeting in January:

President—Dr. G. A. Kilpatrick, Henryetta.  
Vice-President—Dr. H. O. Randel, Okmulgee.  
Secretary-Treasurer—Dr. M. B. Glismann, Okmulgee.

Censors—Drs. W. M. Cott, J. C. Rembert and C. M. Ming, all of Okmulgee.

Dr. LeRoy Long, Oklahoma City, and Dr. L. S. Willour, McAlester, were the speakers of the evening, Dr. Willour installing the new officers.

CLEVELAND County Medical Society held their annual meeting in January and the following officers were elected for 1935:

President—Dr. Chas. A. Brake, Norman.  
Vice-President—Dr. R. D. Lowther, Norman.  
Secretary—Dr. J. L. Haddock, Norman.  
Delegate to the State Convention—Dr. D. G. Willard.

Drs. B. H. Cooley and H. B. Kniseley were appointed on the legislative committee.

COMANCHE COUNTY MEDICAL SOCIETY installed the following officers for 1935, at their annual meeting in January, held at the Kiowa Indian Hospital:

Dr. O. L. Parsons, President; Dr. H. A. Angus, Vice-President; Dr. E. P. Hathaway, re-elected as Secretary-Treasurer; Dr. F. W. Hammond, censor; all of Lawton.

POTTAWATOMIE County Medical Society met for their annual meeting at the Aldridge Hotel, Shawnee. After a 7:00 o'clock banquet the following program was presented:

President's Address—Dr. R. M. Anderson.  
History of the Auxiliary—Mrs. T. D. Rowland.  
Annual Address—Dr. J. M. Alford, Oklahoma City.  
The State Medical Association—Dr. LeRoy Long, Oklahoma City.  
The Journal—Dr. L. S. Willour, McAlester.  
Annual Installation of Officers—Dr. J. A. Walker.  
Moving Pictures, "Alaskan Fishing Expedition"—Dr. J. E. Hughes.

PONTOTOC County Medical Society held their annual meeting in January and elected the following officers for 1935:

President—Dr. J. A. Rutledge.  
Vice-President—Dr. Catherine Brydia.  
Secretary—Dr. W. F. Dean. All of Ada.

COMANCHE County Medical Society was entertained January 24 by the medical officers of the station hospital of Ft. Sill at the new officers' club. Dinner was served, after which the following papers were presented:

"Eclampsia," by Major John M. Tamraz.  
"Medical Survey of School Children," by Captain C. B. Morgan.

### **INTERESTING KANSAS CITY MEETINGS**

The Midwest sectional meeting of the American College of Surgeons this year will be held in Kansas City, Missouri, on Tuesday and Wednesday, March 12 and 13. Headquarters will be at the Hotel President.

There will be included in this section the following states: Missouri, Kansas, Arkansas, Iowa, Nebraska, Oklahoma and Colorado.

An active Committee on local arrangements, with

Dr. Michael J. Owens as Chairman, and Dr. James R. McVay as Secretary, has plans well in hand for an excellent meeting.

A cordial invitation to attend this most interesting meeting is extended not only to the fellows and the hospitals of the various states included, but to the entire medical profession at large.

The spring meeting of the Kansas City Southwest Clinical Society will be held Monday, March 11, 1935, in the President Hotel. This meeting will open a three-day meeting, of which the last two days will be presented by the Midwest Section of the American College of Surgeons.

The entire day's program will be given over to scientific sessions, with presentation of lectures by members of the Clinical Society. Guest speakers who will also appear on the program are: Dr. Frederic W. Bancroft, New York City, Associate Professor of Clinical Surgery, Columbia University College of Physicians and Surgeons; Dr. Irvin Abell, Professor of Clinical Surgery, University of Louisville Medical School, and Dr. Charles L. Scudder, Consulting Surgeon, Massachusetts General Hospital.

The entire three-day meeting is open to the physicians of the southwest. There will not be any registration fee.

#### DALLAS SOUTHERN CLINICAL SOCIETY

The Dallas Southern Clinical Society holds its Seventh Annual Clinical Conference at the Baker Hotel, March 18th-22nd, 1935. This conference promises to be the largest of any of the previous conferences. The work will be more concentrated in that all lectures and afternoon clinics will be held in the Baker Hotel, with the exception of the Wednesday afternoon operative clinics at Baylor, St. Paul's and Medical Arts Hospitals. The general assembly addresses of the distinguished guest speakers will be scheduled at 8:00 o'clock each morning, followed by the post-graduate lectures, with time for visiting the technical and scientific exhibits before luncheon. During the round table luncheon conferences, distinguished guests will answer questions, followed by the afternoon hotel clinics, including the fracture clinic on Monday by Dr. H. Earle Conwell. A symposium Monday night, open to the public with Dr. Douglas Quick's address on "Cancer," and Dr. E. T. Bell on "Bright's Disease," and Reverend H. Lee on "Science and Religion." Tuesday night there will be two symposia; one on "Malignant Disease of the Head and Neck" by Dr. Douglas Quick, and the second on "Acute Intestinal Obstruction" by Dr. Waltman Walters, and Wednesday night there will be a symposium on "Heart Failure" by Drs. M. Bodansky, E. T. Bell and Louis Hamman. On Tuesday afternoon there will be a clinical pathological conference on "Renal Disease" by Drs. Hamman and Bell, and on Thursday a clinical bio-chemical conference on "Thyroid Disease" by Drs. Bodansky and Walters.

New and enlarged scientific exhibits will be seen in the Peacock Terrace, many of which are furnished by the guest speakers, and will relate to subjects discussed by them during the conference. The technical exhibits may be seen on the mezzanine floor and will constitute a valuable educational factor of the conference, presenting the latest drugs, books and equipment by the outstanding pharmaceutical and manufacturing firms of the country.

Thursday night there will be an elaborate clinic dinner and alumni meeting.

Friday will be devoted to a full day session at

both Baylor and St. Paul's Hospitals, with syphilis clinic in the evening at Baylor.

Guest speakers for the 1935 conference include the following:

- Dr. E. T. Bell, Minneapolis—Pathology.
- Dr. Harry L. Baum, Denver—Otolaryngology.
- Dr. H. L. Bockus, Philadelphia—Gastro-enterology.
- Dr. M. Bodansky, Galveston—Physiological Chemistry.
- Dr. H. Earle Conwell, Birmingham—Orthopedic Surgery.
- Dr. Franklin G. Ebaugh, Denver—Psychiatry.
- Dr. Harry S. Gradle, Chicago—Ophthalmology.
- Dr. Louis Hamman, Baltimore—Internal Medicine.
- Dr. A. F. Hartmann, St. Louis—Pediatrics.
- Dr. J. C. Litzenberg, Minneapolis—Gynecology and Obstetrics.
- Dr. Wm. E. Lower, Cleveland—Urology.
- Dr. Douglas Quick, New York City—Radiotherapy and Neoplastic Surgery.
- Dr. Fred Wise, New York City—Dermatology.
- Dr. Waltman Walters, Rochester—Surgery.

#### DOCTOR THOMAS MILTON DeARMAN

Dr. Tom M. DeArman, Miami, died at the Oklahoma General Hospital, Oklahoma City, Monday, January 28, 1935, cause of death being complications following pneumonia.

Dr. DeArman had been associated with his father, Dr. M. M. DeArman, in the practice of medicine in his home city for several years and was greatly admired by both the laity and profession of his section of the state.

Dr. DeArman graduated from the Medical Department of the Oklahoma University in 1928. He was 33 years of age at the time of his death.

Funeral services were held Wednesday, January 30th, from the home of his parents, Dr. and Mrs. M. M. DeArman, 35 E Street.

The active pallbearers were intimate friends of the doctor and the honorary pallbearers were members of the Ottawa County Medical Society. Burial was in the G. A. R. cemetery.

#### DOCTOR JOSEPH MARTIN THOMPSON

Dr. J. M. Thompson, pioneer physician of Tahlequah and Cherokee county, died January 2, 1935, in the Veterans' Hospital, Muskogee, after a long illness.

He was born in the Chickasaw Nation near the Red River, February 8, 1865. The family moved to Tahlequah in 1877. After graduation from the Cherokee Seminary in Tahlequah, Dr. Thompson attended the Missouri Medical College (now Washington University), graduating in 1889. In the same year he married Miss Lula Elliott, who, with two daughters, survive.

Prior to statehood Dr. Thompson was medical superintendent of all Cherokee institutions.

Burial was in Tahlequah.



# ABSTRACTS » REVIEWS » COMMENTS AND CORRESPONDENCE

## EYE, EAR, NOSE and THROAT

Edited by Marvin D. Henley, M.D.  
911 Medical Arts Bldg., Tulsa

Diagnosis of Diseases of the Eye. Harold G. A. Gjessing, M.D., Drammen, Norway. *Archives of Ophthalmology*, September, 1934.

"Pain is the Lord's greatest gift to humanity. This alone makes the patient call on the physician in time." This is a paradox of one of the late teachers of the writer. This original manuscript relates to us in a pleasing manner some of the mistakes made by the writer in the diagnosis of diseases of the eye in his twenty-three years' experience and stresses some of the diagnostic points which he considers the most important. The mistakes are attributed to lack of ophthalmological knowledge or carelessness in examination. The history and spontaneous statements of the patient are evaluated. He says the two main reasons a patient consults an ophthalmologist is pain and difficulty in reading.

Some of the conditions producing orbital pain are first discussed. The superficial pain may be the result of acute conjunctivitis, marginal ulcers of the cornea, cilium in the lacrimal punctum, chronic catarrh, dry blepharitis, a number of different pathologic conditions included in the group diagnosed as herpes cornea, keratitis bullosa, the Hansen-Grutz "nail keratitis," resulting from finger nail scratches of the cornea, usually by a baby and a similar lesion caused by previous scratches such as is produced by a twig. The deep seated inflammations produce a different type of pain; it is often described as dull and boring, analagous to a toothache. The pain associated with trigeminal neuralgia is rarely confused with any other condition. Acute retrobulbar neuritis as a rule does not produce severe pain. It is aggravated by movements of the eye outward or downward and outward. A careful search should be made for central or paracentral scotomas. A careful history will many times point to an incipient disseminated sclerosis. The rarer tumors of the optic nerve and its sheaths or tumors near the foramen opticum should not be forgotten.

In primary glaucoma the tension is the highest in the morning and may be normal in the afternoon. An important point that is indicative of glaucoma is when the presbyope states, without being questioned, that he has had to have his glasses changed quite often during the past year. He reminds us that the tension in glaucoma in myopes is often below that in hypermetropes. The pain in glaucoma is frequently followed by vomiting and collapse while in iridocyclitis this is not so common.

Retinal, conjunctival, accomodative or muscular asthenopia may cause the patient to consult an ophthalmologist. Some conditions with migraine-like symptoms are: tumor cerebri, supra-orbital neuralgia, sinusitis frontalis, syphilitic dolores osteocopi, nephritis and vascular disease. Sudden loss of vision in both eyes may be attributed to autointoxication as in uremia, intoxication caused by methyl alcohol and quinine. If this occurs in one eye we should think

of a detached retina or heavy bleeding in the corpus vitreum. Chromatopsia may be caused by a number of things among which are diabetes, nicotine, optic atrophy from tabes or some other nerve disease, alcohol to excess, santonin poisoning, cataracta brunea, etc. Diplopia and polyopia may be caused by muscular palsy, encephalitis, syphilis, incipient cataract, slits in the iris and luxation of the lens. Under cataract and changes in the vitreous, choroid and retina, he speaks of blue blindness, vitreous opacities, differentiation in the location of spots in the lens, aqueous and vitreous, phosphenes due to the irritation of the retina, metamorphopsia, macropsia and micropsia.

His method of procedure is outlined in regard to foreign bodies. Instances are cited of wrong diagnoses due to insufficient attention to the history and the behavior of the patient.

Carcinoma of the Tonsil. Le Roy A. Schall, M.D., Boston. *Annals of Otology, Rhinology and Laryngology*, December, 1934.

The Collis P. Huntington Memorial Hospital supplies the statistics for two hundred thirty cases of carcinoma of the tonsil between the years of 1918 and 1930. During this time there were over twenty-four thousand malignancies admitted to the hospital, which makes the incidence of carcinoma of the tonsil about one in every hundred. The smallest number seen in one year was nine and the largest number twenty-six. Americans, Irish and Canadians, in the order named, formed the greatest groups entering the hospital, and the frequency of the carcinoma of the tonsil occurred likewise. The laborer and the skilled laborer formed the two largest occupational groups. Of the two hundred thirty cases, two hundred three or 88.7 per cent were males and twenty-seven or 11.3 per cent were females. One hundred forty-five were married. Practically all were past middle life, the largest number occurring between the ages of sixty and sixty-five. The weights were of no particular significance, a small number even gaining in weight, while only fifty-three showed a loss of weight. In eighteen there was a family history of cancer. Forty-two of the patients did not use tobacco. The primary lesion is not given but in only forty-eight patients was the lesion confined to the tonsil alone.

In order of frequency the following sites were involved: the palate, pyriform sinus, tongue, anterior pillar, post-pharyngeal wall, posterior pillar, lower jaw and the upper jaw. The type of lesion showed ninety-eight ulcerated and a tumor in one hundred thirty-two. The right side was involved in one hundred twenty-seven and the left side in one hundred three. Pain was the predominating symptom. Other symptoms were: complaining of a growth, bleeding, hoarseness, ulceration, dysphagia, dysphonia and leucoplakia. The symptoms were present on an average of three to six months before medical aid was sought. Glandular involvement was common and many times quite extensive. The pathology of the majority of the tissues was epidermoid carcinoma. The treatment consisted chiefly of radium and high voltage roentgen ray therapy. The technic and dosage is discussed. Usually about a week after the use of the radium, the roentgen ray therapy was started. One hundred four cases were so treated.

One hundred eighteen cases were actually treated at the hospital due to the fact that thirteen came in for diagnosis only and ninety-nine who were practically beyond help when first seen did not complete their treatment. Of the series of two hundred thirty cases there are now twenty-two living, eighteen of which are clinically without cancer; two hundred two dead, and the condition of six unknown.

**Lipoid Granulomatosis of Bones.** J. S. Fraser, Edinburgh. *The Journal of Laryngology and Otology*, October, 1934.

The diagnosis of the Hand-Schuller-Christian disease is made by the typical disease triad, viz., exophthalmos, diabetes insipidus and lacunae in the skull bones, particularly the temporal and parietal, as shown in the radiograms. However in fifty-three cases the typical disease triad was complete in only sixteen. The blood readings show an excess of cholesterol and lecithin. Hand, who thought the disease of tuberculous origin, first described it in 1893. Schuller in 1915 and Christian in 1919, further described the condition. The infiltration from the sella turcica along the optic nerve produces the exophthalmos. The variation of the accompanying signs and symptoms is multitudinous with the otological symptoms many times predominating. Excessive thirst resulting in the drinking of immense quantities of water is another prominent symptom. The teeth may become so loosened that they may be picked out leaving a pocket of what appears to be inspissated pus. Reddish-yellow nodules, covered by hemorrhagic crusts, may appear on the skin of the chest, on the shoulder region, and other parts of the body.

Pathologists from their microscopic examination have returned such diagnoses as: gumma, round-celled sarcoma, endothelioma and chloroma. The pathology is a deposit of lipoid in various parts of the body evidently due to an error in the lipoid metabolism. Reticulo-endothelial tissue is intimately concerned in the metabolism of the lipoids. Raab's theory is that the fat metabolism is under the control of a centre situated in the pituitary gland. Tissues rich in mesothelium are most frequently affected, i. e. the tissue between the pituitary and the cavernous sinuses, the diploe, the marrow of the bones developed in membrane and the tissues which originally constitute the dental sacs. As the disease advances other structures, such as the liver, may be involved.

In children the clinical aspect is that of a thin, poorly developed child, who is cross, irritable, difficult to examine and cries easily. Veins of the scalp are particularly noticeable. The disease, if untreated, may grow progressively worse, ending fatally. Macroscopically the affected tissue is yellowish and caseous. The French describe the extensive destruction of the skull bones as a "gelatinous skull".

The most important factor in the treatment of this disease is deep X-ray therapy, administered in suitable doses, regularly, and over a long period of time. In one of the cases reported there had been up to the present time fifty-two X-ray treatments given without any ill effects. The dosage is discussed. Pituitary extract controls the polyuria and the diabetes insipidus. In addition, the patient has a diet which is low in fat content and in cholesterol-containing substances and high in percentage of green vegetables. Six or seven cases are reported by the essayist, some of which were seen by his colleagues. They vary in age from twenty months to fifty years. The manner in which the diagnosis was made in the different cases is quite interesting, for as Fraser says, the diagnosis is not hard to make if the possibility occurs to one's mind.

## SYMPOSIUM: HOW TO OBIVIATE FAILURES IN RESULTS OF SURGERY IN OTOLARYNGOLOGY. THE LARYNGOSCOPE, NOVEMBER, 1934.

### I. How to Obviate Failures in the Results of Tonsillectomy. David H. Jones, New York.

According to the writer, complications following tonsillectomy have been greatly reduced but the human element enters into this work; some operators doing excellent work, while others, no matter how much effort is expended, never succeed. The most common post-operative complication is hemorrhage, but the percentage of post-operative bleeding is much less than it was a few years ago. Practically all adenoid hemorrhages may be stopped by the removal of a piece of adenoid. No deaths have occurred from bleeding as all patients, with severe hemorrhage, were transfused. Secondary hemorrhages are much harder to control than those of primary origin occurring during the first twenty-four hours. A hemorrhage starting eleven days after operation was the longest on record at the Manhattan Eye, Ear and Throat Hospital. A complete amputation of the epiglottis in a colored child occurred during the removal of the infra tonsil of French. In trying to discover the cause of this unusual circumstance, it was found that the epiglottis in colored children extends much farther forward on the tongue than it does in white children. The patient under discussion suffered no ill effects. One patient had loss of taste and two had a perversion of taste. An X-ray is made immediately if an instrument is broken or a tooth missed. Five deaths occurred out of 52,467 tonsillectomies. De-etherizing of patients after operation practically eliminates the post-operative pulmonary complications. Other complications noted are hoarseness, hematoma of the palate, and one peritonsillar abscess (both after a local); one Vincent's angina and one case of diphtheria. Five charts used in the clinic accompany this article. The first is a detailed check-up of the patient, the second and third gives the definite instructions to the patient to be operated, the fourth is a compilation of reasons for operations, and the fifth includes the operation according to age, the number of operations, whether local or general and the hemorrhage record book which is kept in each ward.

### II. How to Obviate Failures in the Results of Paranasal Sinus Surgery. Robert E. Buckley, New York.

The general practitioner has for a great many years severely criticised the specialist because of lack of successful sinus surgery. We know, however, that good results are obtained, but to do this, care must be taken to operate only the right type of case. Improper selection of cases is one of the foremost causes of failure. An asthmatic patient is seldom cured by radical sinus surgery. Retrobulbar neuritis was formerly thought to be caused by infected sinuses but now we are more apt to consider multiple sclerosis and intracranial complications as sequelae of sinus infections. Unless the benefit derived more than offsets the traumatization of the tissues, the operation is ill advised. If done carefully, the writer considers the intranasal operation one of the most successful. To secure the desired result a large permanent opening must be made. If the inferior turbinate interferes with the drainage from the antrum, then part of the inferior turbinate must be removed to assure adequate drainage. Another cause for failure is hemorrhage which may result from two sources, i. e. extensive damage to the posterior one-third of the inferior turbinate or from the posterior palatine artery which is opened when the instrument bites too far back. Some of the failures of the Caldwell-Luc operation may be due to a hemorrhage from the superior dental artery,



anaesthesia resulting from nerve injury or failure to remove the mucous membrane of the nasosinusal wall. Failures of the ethmoid operation may be attributed to incompleteness, meningitis, hemorrhage, perforation of the orbital plate and failure to do a submucous resection before the ethmoid operation. Lack of positive identification of a supraorbital ethmoid cell is one important cause of failure when an external sinus operation is done. Another cause is an incomplete exposure of the orbital capsule, thus obscuring the anterior ethmoidal artery which is the only sure landmark in this operation. Sometimes a second operation is necessary, but the writer does not regard a recurrence as necessarily a failure.

### III. How to Obviate Failures in the Results of Simple Mastoidectomy. Dr. Marvin F. Jones, New York.

Knowing when to operate and knowing when to stop should come within the realm of good judgment of every specialist. In this article it is suggested that after you have, in your own estimation, satisfactorily finished a complete mastoid on a cadaver, that you continue your exploration. The author thinks perhaps you will be less critical of another operator's technique and less sure of one's own ability to entirely eradicate infected cells. A keen sense of realizing when to operate is of utmost importance since failures in mastoidectomy sometimes result from the need of operation rather than from the operation. Very careful attention, both before and after operation cannot be too strongly stressed. When spectacular surgery, not proven practical, is followed, the result is likely to be fatal. The recurrence of mastoiditis may be due to the incomplete removal of the infected area or from the pathology of the upper respiratory tract, with the latter causing more recurrences than the former. When more is learned regarding allergy the percentage of recurrences will no doubt be decreased.

## ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.  
717 North Robinson Street, Oklahoma City.

### A Suggestion for a More Accurate Localization of the Sacro-Iliac Joint. Moses Gellman, Baltimore, Md. Jr. Bone & Joint Surg., Vol. XVII, No. 1, January, 1935.

During the performance of an arthrodesis of the sacro-iliac joint after a method of Smith-Petersen, this author has found a more precise delineation of the sacro-iliac joint than the usual anatomical landmarks that are used. It is necessary to have a good surface of the underlying sacrum to obtain a satisfactory arthrodesis. He taps the ilium and percusses over the general region of the sacrum with the handle of an osteotome, and is able to determine a definite area of dullness which accurately defines the superior, inferior, posterior and anterior borders of the sacro-iliac joint. He then removes a "watermelon-plug" type of bone about 1/8-in. to 1/4-in. within the borders of this area of dullness and presses it in the usual manner for the arthrodesis.

### A Method of Strapping the Chest for Fracture of the Ribs. Roland Hammond, Providence, R. I. Jr. Bone & Joint Surg., Vol. XVII, January, 1935.

Instead of using the conventional method of strapping horizontally around the chest, Dr. Hammond straps the ribs in line with the contour of these bones. For instance, he starts at the base of the neck with

the first piece of adhesive and comes around under the axilla and forward across the sternum. The next strip is a little lower than this and downward so that the strapping runs obliquely from the base of the neck down under the arm and then across to the sternum. This method does not restrict breathing but does restrict motion of the ribs, according to the experience of the author. On hairy persons where he wishes to strap the ribs low and horizontally, instead of using adhesive plaster he makes a belt of six-inch webbing, reenforced with corset steels to preserve the shape of the belt and places buckles in front. It is accurately fitted to the shape of the chest wall and remains in place well without slipping.

### A New Type of Fracture Band. F. Walter Carruthers, Little Rock, Ark. Jr. Bone & Joint Surg., Vol. XVII, January, 1935.

Dr. Carruthers has ingeniously suggested a flattened band of kangaroo tendon which makes it possible to immobilize the fragments at open operation without using non-absorbable material. The middle portion of the usual rounded kangaroo suture has been flattened out, making the center ribbon-like in appearance. This gives the needed surface contact for support when the band is applied about a fracture. Each end of the tendon is left rounded, so that the ends may be tied together easily or one end may be placed through a drill hole as he describes in an illustration and after wrapping it several times obliquely around the bone, the other end is also placed in a drill hole. He also places it around the bone in a figure-of-eight manner and the tapering ends are tied together securely. The author has used it in fourteen cases of fracture and finds it very satisfactory.

### A Lateral View of the Clavicle. Roentgenographic Demonstration by a New Technique. Herman B. Phillips, New York City. Jr. Bone & Joint Surg., Vol. XVII, January, 1935.

The usual routine for examining a clavicle is by antero-posterior exposure by having the patient lie prone on the xray table with the plate next to the clavicle. The new lateral exposure is made by placing the film slightly lower than in the usual antero-posterior exposure and a small cone with long distance is used, affording a tangential view of the clavicular region. The tube film distance should be about 36 inches and the angle to the feet varies from 25 to 30 degrees. The position of the tube is several inches beyond the top of the head. He shows an illustration in which the antero-posterior view would indicate a good reduction of the fractured clavicle but in the lateral view the fracture is multiple with rather marked mal-position of the fragments.

## INTERNAL MEDICINE

Edited by L. J. Moorman, M.D., 1200 N. Walker, Oklahoma City; C. E. Bradley, M.D., Medical Arts Building, Tulsa; Hugh Jeter, M.D., 1200 N. Walker, Oklahoma City

By C. E. BRADLEY, M.D.

### Amebiasis in Children. Samuel J. Nichamin, M.D.; Henry G. Poncher, M.D., and Marian Hood, Chicago, Illinois. Journal of Pediatrics, Vol. 5, No. 6, Page 741.

Amebic dysentery with its classical gastrointestinal symptomatology is relatively uncommon in children; however, a surprisingly large percentage of children,

in various localities, have been shown to be infested with endameba histolytica.

Up to the present time, studies have been made chiefly in the southern states and on the Pacific coast in this country with various workers reporting a widely varying incidence of infestation with endameba histolytica of from 0.4% to 30%. The 0.4% is the incidence reported from the private practice of a doctor in California, while the 30% is the incidence reported in children from 5 to 15 years of age in a rural community in Virginia.

Studies in the northern states have been meager, but Owen, Honess, and Simon report an incidence of endameba histolytica of 26.5% in 83 American Indian boys living in a mission school in central Wyoming. Owen also reports his findings from an examination of 43 boys in an orphanage in Oregon. He reports a parasitic infestation of 71%, 4.7% being endameba histolytica.

The recent Chicago outbreak has awakened a great many people to the fact that amebiasis is a definite problem in the United States. Too many still fail to realize that amebic dysentery is only one form of amebiasis, and that many vague and obscure abdominal symptoms, especially in children, may be due to endameba histolytica. It has been conclusively shown that the parasite is definitely pathogenic for man. It may produce lesions varying from those of microscopic size to large ulcerations. Even individuals with amebic abscess of the liver have failed to present the classical symptoms of infestation with endameba histolytica. Often shock, operation, or some bacterial infection serves to unbalance the equilibrium between the parasite and host and acute symptoms develop which lead to the discovery of the parasite.

The causes of obscure abdominal pain in children are many and of diverse origins, but the possibility of endameba histolytica infestation should not be overlooked. Examination of at least six warm stools by an experienced worker should be made at different times before amebiasis is definitely ruled out. Saline cathartics are often a help especially in finding the vegetative forms of the ameba. It is interesting to note that the authors found cysts of endameba coli in all cases in which they later demonstrated endameba histolytica. This coincides with the results of Faust who found that the index of endameba histolytica, endameba coli, and endolimax nana ran parallel in a given locality; he expressed the belief that the incidence of endameba coli could be taken as the index of endameba histolytica in a given locality.

The authors cite six cases, similar to the following one, of children who had vague abdominal symptoms which were later shown to be due to infestation with endameba histolytica. In two cases appendectomies were performed in an effort to alleviate the symptoms.

Case 3. Mary G., white, age twelve years, was admitted to the surgical service December 4, 1933, complaining of pain in the right lower quadrant of the abdomen for two days. She gave a history of vague, generalized abdominal pain of many months' duration. There was no relation to the ingestion of food or bowel movement. Vomiting occurred occasionally; constipation was noted, and cathartics were given frequently. Physical examination was negative except for marked tenderness on deep palpation over the course of the colon, especially on the right side. There was no rigidity. Rectal examination was negative. White blood count was 6,650; polymorphonuclears 50%, lymphocytes 46%, monocytes 2%, and eosinophils 2%. Examination of fresh, warm stools showed vegetative forms of endameba histolytica with occa-

sional endameba coli cysts on repeated examinations. Proctoscopic examination revealed typical amebic ulcerations in the rectum. The patient was transferred to the Municipal Contagious Hospital, and was discharged in six weeks completely well. Since that time she has had no complaints.

It is evident that infestation with endameba histolytica is a real problem in children as well as in adults. Only careful and repeated examinations of stools in cases of obscure intestinal disturbances will yield a true knowledge of the incidence of the condition with the eventual reduction of the number of children infested.

**Idiosyncrasy to Ammoniated Mercury Ointment. Report of a Case.** Paul Harper, M.D., New Haven, Conn. *Journal of Pediatrics*, December, 1934, Vol. 5, No. 6, Page 794.

The author reports two cases of idiosyncrasy to ammoniated mercury ointment and suggests that the toxic reactions from local applications are more common than a review of the literature would indicate.

Case 1, a twelve-months-old female, had a generalized papulovesicular eruption, stomatitis and peculiar cyanosis and edema of the hands and feet within a few hours after ammoniated mercury ointment was applied to some impetiginous lesions. The case history, blood Wassermann and tuberculin tests, and repeated urine examinations were negative. The blood count was normal except for white blood count of 15,000 with a slight polymorphonuclear response.

Boric acid compresses and vaseline applications brought complete recovery in 24 days.

A series of skin tests confirmed the fact that the child was sensitive to the ammoniated mercury rather than to other ointments.

The second case, a sixteen-months-old male infant, paralleled the one given above except for the fact the generalized eruption and desquamatization did not begin until the ninth day. The diagnosis was also confirmed by skin tests.

Maloff and Burgi have shown that the poor absorption of ammoniated mercury ointment due to its being a complex insoluble mercury compound accounts for the rarity of toxic reactions following its use compared with the relative frequent poisoning resulting from the use of blue ointment and grey ointment.

The author believes the reactions in the cases cited were due to an idiosyncrasy to ammoniated mercury rather than to the absorption of large amounts of mercury.

#### A Simple "Stock" Feeding Technique for the Normal Newborn Infant. For Hospital Use.

##### I. Birth to Fourth Day—

Allow the infant to nurse regularly to stimulate the breasts. As a p. c. feeding or every 3 or 4 hours give 2 ounces of the following: First feeding of this hydrating solution may be given one hour after birth:  
Water, 32 ounces.

Beta Lactose, 2 ounces (6 level tablesp.).  
Sodium Citrate (or sodium chloride) 1 dram (app. 1 teaspoon) (if chloride used, 1-2 teaspoon).

Calories per ounce—7.5.

Before adding the citrate, autoclave if facilities permit, or boil.



Note: No cow's milk in any form is given the baby during this period.

## II. Fourth Day—

### A. If breast milk is established or assured.

Continue the beta lactose-citrate solution or the following Dryco formula as p. c. feeding until discharge.

### B. If artificial feeding is indicated.

Artificial feeding is instituted with the following formula (house formula):

"Special" Dryco (added Vit. B complex) ounces 3 (24 level tablesp.).

Beta Lactose, ounces 1 (3 level tablesp.).

Boiled water, ounces 30.

Offer three ounces seven times a day.

Calories per ounce—15.5 (lower caloric feeding indicated with added Vitamin B).

**Alternative Formula**—If hospital is on schedule of six feedings instead of seven:

"Special" Dryco, ounces 3 (24 level tablesp.).

Beta Lactose, ounces 2 (6 level tablesp.).

Boiled water, ounces 29.

Offer three ounces six times a day.

Calories per ounce—19.5.

To Prepare: Boil water and beta lactose. Place measured amount of Dryco in a deep bowl, add a little of the beta lactose water while still hot and work into a paste. Then add remainder of water. Divide into individual feedings and place in refrigerator until needed. Warm bottle before feeding and shake well if there is any settling.

## III. Formula After Discharge—

The following method is used to construct a discharge formula and for feeding the normal baby until cereals and vegetables enter the diet. The same formula is used for feeding p. c. to the breast.

In brief, this formula provides for  $2\frac{1}{2}$  level tablespoons of Dryco for each pound of body weight, plus sufficient beta lactose to bring caloric value up to total desired (with Special Dryco, 45 calories on average are ample). Dilute in ratio of 1 ounce of water to 1 level tablespoon of Dryco.

In detail, if 45 calories per pound are desired:

1. Use  $2\frac{1}{2}$  level tablespoons of Dryco for each pound of body weight.
2. Multiply number of tablespoons of Dryco by 16 to obtain calories supplied by Dryco.
3. Multiply pounds of body weight by 45 to obtain total caloric requirement.
4. Make up difference between (3) and (2) with beta lactose. Each level tablespoonful of beta lactose supplies 40 calories—3 tablespoons equal 1 ounce.
5. Dilute in ratio of 1 oz. to 1 level tablespoon of Dryco.
6. Increase formula when baby reaches next even weight figure (8, 9, 10 pounds, etc.). If baby is underweight, calculate formula according to expected weight.

Example: Formula for eight-pound baby:

1. Use 20 level tablespoons Dryco ( $8 \times 2\frac{1}{2}$ )
2. This amount of Dryco supplies 320 calories ( $20 \times 16$ )
3. The total caloric requirement is 360 calories ( $8 \times 45$ )

4. The difference, 40 calories, is supplied by one level tablespoon of beta lactose

5. Dilute in 20 oz. of water

6. Divide into number of feedings desired

Note: No cod-liver oil or other anti-rachitic is needed. Irradiated Dryco automatically supplies complete protection against rickets.

By HUGH JETER, M.D.

**Why Cancer Is Not Recognized Early.** William Carpenter MacCarty, M.D. (Division on Surgical Pathology, The Mayo Clinic, Rochester, Minnesota). *The American Journal of Cancer*, Vol. XXII, December, 1934, No. 4, Page 830.

"That cancer is not recognized in its early stage by the medical profession as a whole is quite obvious from the following facts: 1. Thirty to 50 per cent of the cancers of the breast (Harrington), 42 per cent of the cancers of the large intestine (Rankin), and 75 per cent of the cancers of the stomach (Belfour) are inoperable when first seen in the Mayo Clinic. 2. Sixty-two per cent of the operable cancers of the breast, 38 per cent of the cancers of the large intestine, and 53.5 per cent of the cancers of the stomach have metastasized to regional lymph nodes when seen. 3. The average size of operable cancers of the breast is 3.2 cm. in diameter, of those of the large intestine 6.4 cm., and of those of the stomach 6.1 cm. (5). 4. Only 29 per cent of the operable cancers of the breast are smaller than a quarter of a dollar (2.5 cm.), and this is true of only 2.2 per cent of the cancers of the large intestine and only 6 per cent of cancers of the stomach (4).

"That cancers do occur and are sometimes found as very small specimens is also quit obvious from the fact that in a series of 7,179 specimens of surgically removed cancers, the smallest found in the breast was 2mm. in diameter, in the large intestine 9 mm., and in the stomach 5mm."

He reports briefly upon the study of 100 cases of cancer of the stomach and emphasizes the fact that cancer does occur as a small lesion and that special xray study should be made, in some instances surgical removal of questionable lesions is justified in an attempt toward early diagnosis and cure.

He emphasizes the fact that the early lesion of cancer does not give the usual signs and symptoms of cancer as described in text books of pathology and of practice of medicine. Physicians should, therefore, not wait for the classical text-book picture of malignancy.

**Some Medicolegal Aspects of Iso-Agglutinins.** Herman A. Heise, Columbia Hospital, Milwaukee, Wisconsin. *American Journal of Clinical Pathology*, Vol. 4, September, 1934, No. 5, Page 400.

In this, a study of 240 certified parents and their 259 children are studied. No exceptions to the Bernstein theory were found.

Three medicolegal cases are briefly given illustrating the importance and value of blood groups in proving certain parties not to be the parent.

The lack of understanding of attorneys and jurymen is shown, and he urges the adoption of the Landsteiner classification for the purpose of simplicity. He points out that Judge John Morrow of Uniontown, after several months' study, first recorded a

statement November 1, 1931, recognizing blood grouping to exclude paternity.

The following table shows the principle of the test:

Groups of Parents	Groups of Children Possible	Groups of Children not possible
O X O	O	A B AB
O X A	O A	B AB
O X B	O B	A AB
A X A	O A	B AB
A X B	O A B AB	
B X B	O B	A AB
AB X O	A B	O AB
AB X A	A B AB	O
AB X B	A B AB	O
AB X AB	A B AB	O

**Is Cancer Becoming More Prevalent?** Charles Bolduan and Louis Weiner (Department of Health, City of New York). The American Journal of Cancer, Vol. XXI, August, 1934, No. 4, Page 825.

In this the author brings out some important facts in connection with the death rate from cancer and bases his report upon New York Health Department statistics.

He points out that it is natural to expect an increase in registered death rates of cancer. Like diabetes and diseases of the heart and arteries, cancer is more frequent because of the aging population.

For purposes of analysis he divides cancer into "visible," meaning cancer of the skin, breast, buccal cavity and female genitals, and "other" forms of cancer. His conclusions are based upon visible types and seem to infer that the important factor of diagnosis is thus eliminated, thereby making death rate statistics more dependable. Interesting groups and charts are given. From these he concludes that cancer is no more prevalent now, in any age group, than it was a generation ago.

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
LeRoy Long Clinic  
714 Medical Arts Bldg., Oklahoma City.

**The Hemorrhagic Tendency in Obstructive Jaundice.** By I. S. Ravdin, M. D., Cecilia Riegel, Ph.D., and P. J. Morrison, M.A., Philadelphia, Pa. *Annals of Surgery*, January, 1935, Page 605.

The tendency to spontaneous and postoperative hemorrhage in patients with obstructive jaundice has for years attracted the attention of clinicians and investigators. It is now a well recognized fact that neither the bleeding nor the coagulation time is of any value in prognosticating postoperative hemorrhage. Even when a prolonged coagulation time is brought to within normal limits by therapy prior to operation, postoperative hemorrhage may occur.

For a time it was thought that the sedimentation rate of the blood would offer information of prognostic importance, but the sedimentation rate may be profoundly altered by so many factors which may be coincidentally associated with obstructive jaundice that this is no longer considered a reliable method. Anemia, infection, tissue injury, and dehydration are frequently present, and although each of these may affect the sedimentation rate it may play little or no part in preventing the blood from clotting normally. The relationship of serum calcium to jaundice has been carefully reviewed by numerous workers and there is no proof of a calcium deficiency in obstruc-

tive jaundice, nor any direct proof that the diffusible or non-diffusible calcium was in any manner deficient. Five patients who showed a hemorrhage tendency after operation were studied by Ravdin and the diffusible calcium in the serum varied from 52.7 to 59.9 per cent which is well within normal limits.

It is undoubtedly true that the simultaneous use of glucose and calcium in the pre-operative preparation of the jaundiced patient has resulted in a marked decrease in the incidence of postoperative hemorrhage. Since no deficiency exists in serum calcium it seems highly possible that the beneficial effect of the pre-operative treatment might be ascribed to the use of glucose prior to operation. However, in an extended series of studies the authors have failed to find any direct parallelism between the fasting blood sugar and the coagulation time. However, they find that glucose alone given intravenously or by mouth favorably affects the coagulation time in both the normal and the jaundiced dog, and in patients with obstructive jaundice when the liver damage is not too great.

It was supposed by some investigators that during obstructive jaundice there might exist a deficiency of available fibrinogen since obstruction of the common duct results in a variable degree of liver damage. However, various investigators have studied this problem and they find no deficiency of fibrinogen in this condition.

It would appear from the data here presented that the hemorrhagic tendency of the patient or animal suffering from an obstruction of the common bile duct is not due to a deficiency of any known substance in the blood which normally takes part in the clotting mechanism.

Regardless of the outcome of this extremely interesting and important problem, the facts remain that at present (with the exception of blood) carbohydrates by mouth or intravenously offer the best hope of preventing hemorrhage in patients with obstructive jaundice.

**Comment:** I agree with the authors' conclusion that clinically the use of blood and of carbohydrates is of the greatest importance. I also agree that the pre-operative use of calcium is of doubtful value. In my experience the use of citrated blood has been of as great value as the use of whole blood.

—LeRoy D. Long.

**Abstracts: Infection of the Immature Vagina—Observations and Results.** The Western Journal of Surgery, Obstetrics and Gynecology, December, 1934, Page 669. By Goodrich C. Schauffler, Ray Duke, S. F. Crynes and Caroline Schauffler.

These authors are reporting the results of treatment in a series of 189 patients, ranging in age from four months to fourteen years. Of these cases 108 were seen in private practice and 81 in the Portland Free Dispensary.

Of the 189 patients, 99 were treated by the method recommended by the author, whereas the others were treated by several other methods in smaller groups.

By referring to an article of the author in the American Journal of Obstetrics and Gynecology for March, 1933, one finds the principle of the author's treatment. There he points out that douches, instillations, injections, etc., have been used empirically and ineffectually for many years. He emphasizes the need for universal application to the affected area of a reliable antiseptic over a prolonged period of time. The most effective approach to these indications is achieved by the use of the relatively firm



ointment base, injected by a technique which insures the production of sufficient intra-vaginal pressure to cause invasion of the ointment into every crypt and corner. These authors have used plain anhydrous lanolin incorporating one per cent silver nitrate. The ointment should not be warm, as its quality of firmness facilitates distention of the vagina with the use of mild intravaginal pressure. It also makes possible more complete and prolonged retention of the antiseptic material. The author points out that this is in direct contrast to the usual vaseline base which is repulsed by moisture.

The authors have supplemented their clinical studies by the injection of post-mortem specimens by this technic. Clinical x-ray visualization of the vaginal cavity has also been made possible by the employment of opaque media. It has been shown that the ointment remains in the vagina over periods varying up to 48 hours. In using this method in over two thousand treatments they report no instance of untoward effect.

The criteria employed for cured cases has been the absence of symptoms together with negative smears without treatment covering a period of three weeks. The average number of days required for cure in cases without recurrence or re-infection has been 81 days, whereas the average number of treatments required for cure in this group of cases has been 17-9/10 treatments. The average time before symptomatic relief in these cases has been 20-9/10 days and an average of 8-2/10 treatments.

The incidence of recurrence or re-infections has been 32-2/10 per cent in the private cases and 9-3/10 per cent in the clinical cases. The authors attribute this discrepancy to the fact that the clinic cases have been treated over a longer period with more treatment because of the absence of economic strain. They term recurrence any recrudescence of symptoms and positive smears after a period of not less than a month of complete freedom from symptoms and positive smears.

These authors feel that hospitalization and institutionalization not wise unless absolutely necessary, the patients being probably better treated if committed to a foster home.

They have demonstrated by positive smears an incidence of gonorrhea in 52-5/10 per cent of their cases. They are convinced that a large number of the remaining cases called questionable or negative were gonorrheal in origin, the infection being either massed or supplemented by secondary infection. The percentage of eventual cures and the amount of treatment necessary to obtain cure have been about the same in both gonorrheal and non-gonorrheal groups. They have concluded that clinically there is little distinction between these two groups, both as regards danger of transmission and stubbornness of symptoms.

They have outlined certain factors operating with recurrence or re-infection. These are: First, the general resistance factor, including systemic infection and fatiguing activities. Second, other factors: proctitis, pinworms, masturbation and pyelitis have been blamed in other of their recurrences.

They have not seen any cases of true cervicitis, Bartholinitis or Skeneitis. They have had eight cases with possible pelvic involvement. They also mention the incidence of an occasional arthritis and ophthalmitis.

Foreign bodies were recovered in three of their patients and they point out that vaginitis due to a foreign body almost constantly has a serosanguinous

discharge whereas blood is seldom noted in the usual vaginitis.

They discuss the treatment of this condition emphasizing that of the various antiseptics clinically employed none have been as efficient in the management of this condition as simple one per cent silver nitrate incorporated in an anhydrous lanolin base.

They report a few cases who could not be treated in their clinic who used suppositories containing 1/16 of a gram of pyridium (Merck) in a boroglyceride gelatin base. This treatment has given remarkably good results but not equal to their treatment with one per cent silver nitrate in lanolin.

The cold quartz-light was applied with orificial applicator and seemed to be of definite benefit as a variant to ordinary methods.

Theelin treatment has been disappointing in their hands, though they admit that their cases have not been well selected.

The authors then discuss briefly the psychic situation in regard to this disease.

**Comments:** This disease is a most discouraging one from the standpoint of treatment, largely because of the long period necessary, and the rather high per cent of re-infections or recurrences despite the fact that there are no real areas for harboring the infection such as are found in the adult cervix, Bartholin glands and Skene glands.

After a considerable experience in this type of treatment I would thoroughly recommend the authors' criteria for the method of treatment, that is, an anhydrous base with a disinfectant which will stay in the vagina for a considerable length of time.

The results of Theelin therapy in this condition, which is supposed to depend upon the added resistance of the vaginal mucosa by its adult changes, has been very unsatisfactory in most locations where used.

These authors do not mention one other method of therapy which has given considerable benefit in several cases—that is, diathermy.

—Wendell Long, M.D.

**Acute Pancreatitis.** By Harry Koster and Louis P. Kasman, Brooklyn, New York. *Archives of Surgery*, Volume 29, No. 6, December, 1934, Page 1014.

The increasing incidence, the relative scarcity of preoperative diagnosis, the high mortality rate and the lack of uniformity in therapy merit the many reports of acute pancreatitis which have appeared in the literature within recent years.

The authors report 22 cases of acute pancreatitis with a total mortality rate of 22.7 per cent. Seven cases presented the typical picture of a sudden onset of severe epigastric pain followed by continual vomiting and associated with prostration and cyanosis. Two cases were diagnosed as perforated ulcer. One patient was deeply jaundiced. The remainder of the cases presented a less precipitous onset, which was suggestive of acute disease of the biliary tract. Attention is drawn to the fact that this last-mentioned group of cases occurred most commonly in persons under 36 years of age. It is suggested that in making the diagnosis, acute pancreatitis should be suspected in every case which presents a history and symptomatology suggesting an acute exacerbation of disease of the biliary tract.

The authors advocate immediate, complete and radical operation. They feel that the surgical treatment of acute hemorrhagic pancreatic inflammation

must include the following steps: Drainage of the biliary tract; removal of the gall-bladder if it is diseased or contains stones; removal of calculi, if present, from the common duct; mobility of the duodenum by the Kocher method for the purpose of more accurately palpating the head of the pancreas in search of calculi in Wirsung's duct; splitting of the capsule of the pancreas for the relief of edema, and drainage of the peritoneal sac and the pancreas. The drainage of the biliary tract is best accomplished: First, by passing a rubber tube into the common duct through the stump of the cystic duct if the gall-bladder has been removed for existing disease. Second, by passing a T tube into the common duct, if it has been opened for the removal of stones. Third, by a cholecystostomy in the absence of disease of the gall-bladder or if, as occasionally occurs, the pancreas is so tremendously swollen as to make the common duct inaccessible.

**Comment:** There can be little doubt regarding the favorable influence of decompression of biliary tension by drainage of the biliary tract. Exploration of the common duct is a very important procedure and one which has been all too frequently omitted. This is true, not only in acute pancreatic disease, but also in gall-bladder disease with stones. Occasionally chronic pancreatic inflammation causing jaundice and sometimes thought to be due to carcinoma of the head of the pancreas is in reality due to a stone in the ampulla of Vater. In these cases it is inadvisable to do a trans-duodenal removal of the stone because of the danger of peritonitis and of duodenal fistula. Instead the procedure of rolling the duodenum inward toward the median line and exposing the head of the pancreas retro-duodenally is to be preferred.

—LeRoy D. Long.

The following notes are based upon abstracts by M. Deniker of the proceedings of the 43rd French Congress of Surgery (XLIII Congres Francais de Chirurgie), Paris, October 8-13, 1934, and published in *La Presse Medicale*, October 24, 1934:

1. *La Valeur de l'Application Locale des Vitamines dans le Traitement des Plaies et des Brulures* (The Value of the Local Applications of the Vitamins in the Treatment of Wounds and Burns). By M. de Dziembowski, of Bydgoszcz.

The reporter has successfully employed whale oil in the treatment of wounds and burns. He believes that he has been able to demonstrate the complete absence of bacteria in whale oil that has not been subjected to heat or other means of sterilization. This is considered an important matter from the point of view of conserving the acting vitamins, because they cannot be conserved if the oil is subjected to sterilization by heat.

2. *Note Sur la Vieille Methode du Lever Precoce des Operes, et Sur Son Complement la Gymnastique au Lit* (Note upon the Old Method of Getting Patients Out of Bed Soon After Operations, and Upon Its Complement of Exercises in Bed). By M. Yves Delageniere of Mans, France.

Reference is made to the experience of Henry Delageniere and his pupils in 20,000 patients upon whom operations have been done since the method of early rising from bed was advocated at the French Congress of Surgery in 1909. In this large number of patients they have found the method to be of distinct value, with, however, prudent restrictions in gynecologic interventions and operations involving the central system. It is understood, too, that the method is not applicable to patients in poor condition. In these latter classes of patients exercises in bed (gymnas-

tiques au lit), under the supervision of the nurse, are substituted, and it is believed that such exercises render almost as much service as early rising from bed.

3. *La Plastie de "Fascia Lata" dans les Eventrations Congenitales Dehiscence de la Ligne Blanche* (Plastic Repair of Congenital Eventrations) (Diastasis Recti Abdominis) by the use of Fascia Lata). By M. Rocher, Bordeaux.

Remarking that he had employed free fascia lata several times in the reconstruction of tendons, the author particularly recommends its employment in congenital separation of the recti abdominis. He reports two cases in which the ages of the patients were 7½ years and 3½, respectively.

A part of the technique considered of importance is the opening of the sheath of the right rectus and spreading out the muscle transversely, thus extending the muscular field and at the same time providing for avoidance of tension. The sheath of the right rectus is turned over and sutured to margin of sheath of left rectus, after which the defect left in front is covered by a fascia lata graft that is sutured to the margins of the defect.

4. *Remarques Techniques pour Servir a la Pratique de la Colectomie Ideale en un Temps* (Observations of Service in the Performance of Ideal Colectomy in One Operation). By M. Chaton, Besancon.

Referring to the now somewhat prevalent custom of performing one or more preliminary operations before the operation in which a colectomy is done, the reporter takes a definite position in favor of a single operation. He does not believe that the single complete operation presents any particular or unusual danger, provided that there is adherence to the following requirements:

1. There must be careful and finished suturing with fine needles.
2. There should be three suture lines (suture en trois plans).
3. There must not be tension in connection with sutures.
4. The anastomosis should be side-to-side (latero-laterales).

Speaking particularly of the lateral, or side-to-side coaptation, better blood supply, facility of execution and accuracy are mentioned as advantages of great importance.

#### Comments:

1. We believe that resection of the colon without preliminary operation might be justifiable and even preferable under certain circumstances, like resection of the cecum and ascending colon, for example, with anastomosis of terminal ileum to transverse colon, provided that the patient is in fair condition, and that an ileostomy is done as an emergency safety measure. We do not believe, however, that the single completed operation should be a fixed procedure in all patients.

2. Our experience causes us to be strongly partisan on the side of the lateral, or side-to-side anastomosis, and for the very reasons mentioned in the report. An additional reason is that it is a more aseptic procedure.

—LeRoy Long.



### VITAMIN ADVERTISING AND THE MEAD JOHNSON POLICY

The present spectacle of vitamin advertising running riot in newspapers and magazines and via radio emphasizes the importance of the physician as a controlling agent in the use of vitamin products.

Mead Johnson & Company feel that vitamin therapy, like infant feeding, should be in the hands of the medical profession, and consequently refrain from exploiting vitamins to the public.

#### R. M. DAVIS COMPANY COCOMALT

A food product is available containing sufficient vitamin D so that it is unnecessary to go to the expense of buying vitamin D preparations to supplement the diet. For, according to clinical tests, Cocomalt, when taken three times a day, will supply children with enough vitamin D. Cocomalt contains not less than 30 Steenbock (81 U. S. P. revised) units per ounce—the amount used to make one drink. Cocomalt is licensed by the Wisconsin University Alumni Research Foundation. Ordinarily vitamin D preparations are unpalatable, but in this form its existence is unsuspected.

In addition to its importance as a vitamin D supplement to the diet, Cocomalt is helpful where milk intake is a problem. For Cocomalt, which is designed to be mixed with milk, is truly delicious. But a word of warning must be sounded concerning products that appear to be similar to Cocomalt. For the most part these preparations are mere flavorings—a mixture of chocolate and sugar. Cocomalt, however, is a product designed as a food with vitamin content.

Its tempting chocolate flavor—important as it may be in making milk more palatable—is secondary to its importance as a body-building food with vitamins.

An interesting booklet about the origin and function of all the accepted vitamins has been prepared by R. B. Davis Company, the makers of Cocomalt. It may be secured on request without cost by writing the company at Hoboken, New Jersey, Dept. 000.

### LESIONS OF THE OPTIC NERVE AND RETINA IN PREGNANCY

Henry P. Wagener, Rochester, Minn. (Journal A. M. A., Dec. 22, 1934), points out that the lesions of the retina and optic nerve which occur in pernicious vomiting of pregnancy indicate a severe grade of general toxemia that may prove fatal even if pregnancy is terminated promptly. Earlier and more frequent ophthalmoscopic examinations in cases of pernicious vomiting may serve to give timely warning that the pregnancy should be interrupted. The development of any type of retinitis in a case of hypertensive toxemia of pregnancy is an urgent indication for the termination of pregnancy, not only because of the danger to vision, but also because of the implied certainty of permanent injury to the general vascular system. In cases in which hypertension develops or increases while the patient is under observation, careful watch should be kept for angiospastic lesions of the retinal arterioles, either primary or superimposed on previous organic changes. If the integrity of the systemic arterioles is to be preserved, pregnancy should be terminated, if possible while the arteriolar lesions are still in the angiospastic phase, and certainly at the first indication of the onset of retinitis.

## THE ROBINSON CLINIC

Neurosis is an all-inclusive term applied to functional conditions and, many times, to cases where the diagnosis of organic pathology is obscure.

When the preliminary examination of any patient does not reveal a diagnosis, the case is usually classified as neurosis. Further tests are done and, when there is a dearth of objective findings, the case is finally called neurosis.

We feel that the diagnosis must be made as any other disease entity, not by the absence of objective symptoms, but by the subjective symptoms presented. Thus will fewer mistakes be made.

The neurotic patient presents several constant symptoms. Firstly, and most important, is a great willingness—nay anxiousness—to discuss their symptoms. They go into great detail and try not to forget any detail. Secondly, they all are nervous and weak and most cases suffer from insomnia. Thirdly, there is always some break in their chain of symptoms or events which is illogical, so that the doctor feels the case is a little unusual or organically impossible.

Of course a neurosis may manifest itself in any organ and any symptom may be complained of, but the most common are headache—usually midline—shortness of breath and tachycardia, indigestion and constipation. There may be, of course, many others in the several patients or in one individual.



—Curtiss-Wright Flying Service

DRUG AND  
ALCOHOL  
ADDICTION  
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NERVOUS AND  
MENTAL  
DISEASES

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## MECHANICAL PARTIAL OBSTRUCTION OF THE COLON BY A PERICOLIC MEMBRANE\*

J. H. ROBINSON, M.D.

OKLAHOMA CITY

Acute pain in the right side of the abdomen fortunately is usually associated with many distinct signs and symptoms which point directly towards a definite pathology. A little study and some simple laboratory tests in a high percentage of cases usually establishes a diagnosis. The more acute the disease the more likely we are to have frank local findings, which add to the ease of the diagnosis. An attack of acute appendicitis, acute cholecystitis, or acute renal colic is rarely mis-diagnosed in these days by a senior medical student. They are rather common conditions and their symptoms fairly consistent.

These acute conditions are not subjects for consideration in this short paper. We propose to deal primarily with the pericolic membrane syndrome which is usually spoken of erroneously as chronic appendicitis. For many years I have observed with acute interest that widely known surgeons differ in their opinions as to whether or not there is such a thing as chronic appendicitis. Here, as elsewhere, differences in opinion are usually backed by insufficient understanding. Necessity has forced me into making a thorough investigation into the cause of pain in the right side of the abdomen when the appendix, gall bladder, and kidney can be ruled out. In the first place I was able to get very little help from the literature. In May, 1934, a most excellent article was published in the American Journal of Digestive Diseases and Nutrition, on this very

subject, by Dr. W. H. Bueerman of Portland, Oregon.

We have been very cautious at the clinic in operating upon people for appendicitis unless their symptoms were pretty clear. We have learned that a small percentage of questionable cases operated upon would be back later on confronting us with the same symptoms. Patients of other surgeons come to us from time to time stating that they have colicky pain in the right side of the abdomen just like they had before they had their appendix out. The carefully taken history and physical examination usually produces the necessary evidence to establish a diagnosis of chronic appendicitis even though the appendix and gall bladder may have been removed several years before. These patients have been rather difficult problems. They have been diagnosed neurotics, visceroprotics, chronic mild cholecystitis, or chronic colitis. The latter is very often handed out as a quite likely condition. Patients accept this latter diagnosis pretty well, though they become quite discouraged with results in medical treatment. These unfortunate people drift from one place to another. They fall into the hands of the cults and cure-alls who, as a matter of fact, give them as much relief as the reputable surgeon, and at much less cost.

As early as 1903 Lane described a membrane which he termed a false mesentery, which gives interference to passage of intestinal contents past the hepatic flexure. In 1909 Jackson described a spreading membrane about the cecum and ascending colon which he says presents symptoms easily mistaken for appendicitis. In the

\*Read at Lawton, Okla., Comanche County Medical Society, November 22, 1934.

\*Read at Duncan, Okla., Stephens County Medical Society, November 27, 1934.



Annals of Surgery, in 1918, Harvey gives a review of the literature in which he quotes many authors who have described ligaments or membranes about the colon, gall bladder, duodenum, stomach and other structures. These structures I find have usually been considered congenital. From my observation I question seriously whether they are congenital or acquired. I favor the latter, although lack proof. The condition is so common and material so plentiful that I am giving this only as a preliminary report of work in this most interesting, and sadly neglected, field.

For several years I have observed some web-like, thin, membranous fibers about the cecum usually, but sometimes the colon or gall bladder, with passive momentary interest. My thinking facilities were not keen enough to arouse me to my surgical responsibility to these patients. I had not learned to consider these veils as pathological.

Necessity is the mother of invention. About a year ago a little girl of ten years was brought to us with a diagnosis of mechanical bowel obstruction because of post-operative adhesions. A year or more before she had had her appendix out by one of Oklahoma's best known surgeons. A review of the case revealed that she had only a chronic appendix and from time to time had similar symptoms since appendectomy. This time she had acute peristaltic pain, severe in nature, associated with gaseous gurgling in the abdomen, vomiting, and only slight results but violent pain with enemas. We agreed that she had an acute partial intestinal obstruction and explored under this diagnosis. There were no adhesions to be found. I was by necessity obliged to extend my incision and make a real search for the girl's trouble. The ileum was found much dilated, the cecum also much oversize. A web-like membrane was seen to spread over the ascending colon. About half way between the cecum and hepatic flexure was found a constriction of the colon tightly fixed by this membrane. Beyond this point the colon was collapsed. The membrane was divided and the inverted folds were turned out. Blood vessels in the bands were of sufficient size that ligation was required.

The transverse colon quickly filled with gas, the abdomen closed and the patient made an uneventful recovery. I concluded, of course, that obstruction was due to the membrane and was likely the primary pathology at the time of her appendectomy.

## CASE REPORTS

1. Miss B. S., age 24; single; white.

**Chief Complaint:** Patient was seen several years ago, at which time she complained of an indefinite distress thru lower abdomen. This with story of constipation, palpable cecum and in the presence of a highly nervous type of individual was interpreted as probably a spastic bowel with low distended cecum but considered possibility of an appendix. Six days ago patient developed cramp-like pain in upper right quadrant of abdomen and to some extent across upper abdomen, associated with temperature of 100 and vomiting. Was seen by physician in office down town who thought she might have a gall bladder condition. Was seen by myself in home that evening. Temperature normal. No tenderness over appendix but it did have some tenderness high up on right side under costal margin. No medication was given as a possible high lying retrocecal appendix might be the cause. Next day fever to 100 continued but cramp-like pain had disappeared, leaving soreness under right rib margin. Soreness and pain under right rib margin have continued but no fever—no diarrhea. Vomited again today.

**Examination in brief:** Temperature 99, pulse 84. Abdomen: liver and spleen not palpable. Considerable tenderness and slight rigidity of rectus muscle but none over right lower quadrant. Cecum is palpable, however, but does not appear tender.

**White Blood Count:** 7,800. Gall bladder normal to x-ray except it retains the dye much too long.

**Date:** August 14, 1934.

**Surgical Findings:** Appendectomy, cholecystectomy, lysis peri-colic membrane. G. B. incision. Layer closure, catgut, skin slips. Silkworm tensions. Usual G. B. incision—appendix longer than average—scarred—kinked and showed evidence of past inflammation. G. B. reviewed with apprehension. No stones—questionably thicker than average. Stomach and duodenum passed inspection without pathology. There was a dense, extensive membrane spreading over the lateral side of the colon which probably has had much to do with patient's pain. This was divided.

Case 2. Miss G. S., age 16; white; single.

**Personal History and Chief Complaint:** Measles, mumps, pertussis, rheumatic fever 4 to 5 mos. at age of 6. Appendectomy June 13, 1933—University. General health usually good until after appendectomy, since when she has had attacks similar to present illness every month or so but less severe. Menses began at 13—regular every 28 days (see present illness)—flow 4 days, heavy. Last period March 22, 1934.

**Present Illness—Chief Complaint:** 1. Pain in right side. 2. Nausea and vomiting. Sunday P.M., following cessation of last menstrual period, patient developed aching and cramping pain in right lower quadrant. This became worse the following day and patient vomited. She was also nauseated and vomited several times yesterday. Morphine given by hypo and by mouth last night did not quiet the pain much.

**White Blood Count:** 11,450.

**Examination of Abdomen:** Extreme tenderness to lightest touch in right lower quadrant. Patient holds entire abdomen rigid until mind is otherwise occupied, then there seems to be little or no rigidity in right lower quadrant and no rigidity elsewhere.

March 28, 1934.

**Surgical Findings:** Exploration abdominal—lysis adhesions—median lower incision with removal of former skin scar. Upon exposing the intestine the ileum

found apparently normal; the cecum was unusually large and bulged into the field; some apparent congenital film bands nearly up to the hepatic flexure were found to be apparently partially obstructing the ascending colon, as they caused a marked reduction in calibre at this point. The remainder of the colon beyond this point was narrowed down to perhaps  $\frac{1}{5}$  the calibre of the ascending colon to this point of fixation. Remainder of abdomen palpated normal.

Case 3. Mr. W. M., age 37; geologist; white; married.

**Chief Complaint:** Attacks of pain through right upper abdomen. Patient states that during childhood, after being in a cramped position, he would experience sudden fleeting pain in right upper quadrant. Later he had the same discomfort at times upon sneezing. About one year ago he noticed attacks coming at more frequent intervals—pain being just to the right of the epigastrium. Pain not referred to right shoulder nor to right lower quadrant—not associated with nausea nor with vomiting nor with fever. During past 48 hours he has had pain every hour or two—varying in intensity—at times is quite severe. No jaundice noted. No clay-colored stools noticed. Has had rather marked gaseous formations with attacks. He feels weak and tired following attacks. Some mucus in stools. No tarry appearance.

**Examination of Abdomen:** Free from scars—regular in contour. Small amount of bulging to right and below umbilicus. Muscle tone equal throughout. Left abdomen free from tenderness. Area of right rectus sensitive to moderate pressure; this area is one or two inches lateral and a little below navel. Inguinal rings quite small, indicating no hernia.

**White Blood Count:** 7,100. X-ray and G. I. series negative.

March 31, 1934.

**Surgical Findings:** Appendectomy. Exploration abdominalis general. A 4-inch right rectus incision. The appendix was of average size. It was contracted at its distal end. It had a scarred, drawn appearance, indicating a chronic, infectious process. Gall bladder palpated negative. The ileum was investigated for diverticulum. Stomach and pancreas palpated negative. There was a red membrane on the ascending colon which was accounted for. This was split in two or three tight places. The appendix was considered chronically diseased and there were no other findings to answer for patient's pain. Routine closure. Silky stay sutures.

Case 4. Miss C, age 21; student nurse; white; single.

**Chief Complaint:** 1. Pain in epigastrium. 2. Nausea and vomiting. 3. Pain in abdomen. About one hour ago patient developed sharp cramping pain in epigastrium followed soon by nausea and vomiting. At present patient is having severe cramping about umbilicus and in right lower quadrant.

**Examination of Abdomen:** Marked tenderness in epigastrium and in right side, especially in right lower quadrant. There is moderate muscle rigidity over right side.

**White Blood Count:**

	3-15-34	9-10-34	11-16-34
	9,000	8,600	7,450
Polys. ....	66%	49%	71%
Lymphos. ....	28%	45%	24%
Monos. ....	3%		5%
Trans. ....	1%	2%	
Basophls. ....	1%	1%	
Eosinoph. ....	1%	1%	

**Operative Notes:** 3-15-34. Appendectomy; L. Ovarian cyst. (Dr. Robinson.) The appendix was curled but easily elevated. It was 9 or 10 inches long and sufficiently inflamed to justify patient's symptoms. About 6 inches of its length was as hard as a pipe stem on account of fecaliths. The mass in the left side was a parovarian cyst about the size of a golf ball—it was removed. A malignant cyst on right side removed. Tubes and uterus and ovaries all normal. Usual closure.

7-18-34. Exploration of abdomen and lysis membrane. The former operative scar was excised. The abdomen explored and found entirely free from any adhesions, secondary to former operation. The ileum was traced throughout its course. It contained about a normal quantity of gas. The ileum was very definitely distended with gas. Beginning at the hepatic flexure, or a little below, the colon was smaller than the ileum. Lateral to the ascending colon was a dense, apparently congenital membrane, fixed, which when cut released the distended cecum. This dissection was extensive, it being embedded into coils of the colon. Considered a congenital membrane.

9-24-34. Exploration abdomen, general. Lysis membrane. The incision was made from high medial to below navel, giving good exposure. There was some rather dense membrane over the transverse colon about the G. B. which was dissected loose, the G. B. being freed nearly down to its cervix. This was a dense membrane which after dissection permitted easy elevation of colon. The colon was collapsed beyond this point. The greatest pathology was found one-half way between cecum and hepatic flexure where colon was fixed down by a constricting band making a lumen as small as a little finger. Considerable dissection was required along linear band of colon. At the completion the colon was free from all restriction. In places it was folded onto itself and held by the dense band. Some scarring could be seen from former operation of same nature which had not been sufficiently extensive.

11-23-34. Lysis adhesions; exploration, general. Abdomen opened through former upper wound. Found omentum attached by a broad surface to the parietal peritoneum—this loosened—a loop of ileum was entangled into the omentum constricting it markedly by P. O. adhesions. Colon very much dilated—there was but one place about one-half the distance down the descending colon where it was rolled laterally and adhered down by a band stellate in nature which had evidently been present many years. This was dissected up; ascending colon was explored and found attached to parietal wall and G. B. and liver—apparently secondary—to the raw surface, left after removing membrane at former operation. This was all free at completion of this procedure, although there are multiple abrasions and raw surfaces which make us fear new formation of adhesions.

This patient operated the fourth time on account of recurrence of approaching complete bowel obstruction. The last time the pain and all symptoms in the left side of the abdomen. All former symptoms were limited to the right side.

My office assistant was able to find the records of ten patients operated upon by myself since January 1, 1934, in which I found a peri-colic membrane sufficiently dense to require resection. I have given here only a few of the less complicated cases. Of course, more time will have to lapse before these patients can be considered cured. Possibly more treatment will



be necessary than mere division of the bands, which we have done.

The symptoms and signs of this condition are brought on by a local restriction of the colon, which reduces its calibre sufficiently to produce obstruction. The condition is chronic. Acute exacerbations arise.

*Treatment:* So far as I know, operation is required when the symptoms become severe. The bands have for their origin the parietal wall in the lateral colonic gutter. I have been dividing the bands near their point of origin, then dissecting along the folds of the gut, entirely releasing the constrictions. The walls of the colon are rolled in, causing deep furrows and a marked reduction in its calibre.

*Choice of Incision:* I have always questioned the wisdom of doing a button-hole incision. In this condition it is inadequate. A right rectus or right semilunaris, roomy incision is preferable. The membrane can be reached very well through a gall blad-

der incision. The latter is very practical where an exploration of the upper abdomen is felt necessary.

#### CONCLUSIONS

1. When a patient gives a history of chronic pain in the right side of the abdomen a peri-colic membrane should always be given diagnostic consideration.

2. An incision adequate for exploration should be made when a patient is being operated upon for so-called "chronic appendicitis". If a button-hole incision should ever be made it should be used in acute suppurative cases only.

3. A peri-colic membrane is vastly more common than the profession at large considers.

4. Patients who complain of vague chronic pain in the right side of the abdomen after the gall bladder and appendix have been removed should not be considered neurotics, nor incurable visceropaths, until after the peri-colic membrane has been ruled out.

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## PARANOIA AND PARANOID THINKING\*

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M. S. GRERORY, M.D.  
OKLAHOMA CITY

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In attempting to define paranoia, it will be necessary to define the end-results of paranoia. Paranoia is characterized by systematized delusions of persecution with frequent hallucinations, together with a markedly inflated ego. Also, generally speaking, there is no intellectual deterioration. This colossal ego is a defense mechanism in attempting to make himself comfortable because of inferiority and these delusions of persecution, which are based upon an unconscious hate, make it impossible for him to adjust to his environment. He is living in a sea of suspicion, hate and jealousy, thus making this paranoid character. His adjustment in the home is very poor. He sometimes presents the picture that is well expressed in the layman's phrase, a "home-devil and a street angel."

In order to understand paranoia, it is necessary to discuss the hypothesis of the unconscious. For many years the psy-

chiatrist has believed that a vast amount of motivation of the individual comes from that part of the mind of which we are entirely unaware. We believe that this *unconscious* contains the emotions which have been attached to numerous disagreeable events which have come to the individual from his earliest childhood up to at least puberty. A vast amount of this unconscious mind is made up of emotion only, and this emotion being detached from the incidents with which they were attached before repression took place, is free-floating in the unconscious and may therefore be attached to any incident or any circumstance in the environment. In other words, paranoia resides very largely in the unconscious mind. Here, we will discuss the etiology of paranoia.

*First—Inheritance:* It has been generally believed from earliest times that inheritance plays a very prominent part in the development of this malignant mental disease. At the present time there is much

\*Read before the Canadian County Medical Society, October 6, 1934.

discussion over the question of inheritance. Many good men still believe that inheritance plays a very important part in the development of this condition. Without discussing inheritance further, I wish to repeat a sentence found in "Your Family Tree," by the late David Starr Jordan; he says, "At the moment of conception, the gate of gates is closed forever."

*Second—Environment and Training:* There are many scientific thinkers who believe that environment and training also play a large part in the development of paranoia—that is, when a child is brought up in a home in which there is suspicion, hate and jealousy, this child, through the mechanism of identification, takes from his environment that which he has failed to take through inheritance. The influence of environment is still a matter of energetic discussion; however, anyone who has done extensive psychotherapy becomes convinced that environment is very important.

*Third—Repression of Homo-Love:* Before discussing the repression of "homo-love" perhaps it is necessary to state more clearly what we mean by "homo-love". First, we must consider the complete love reaction of the individual. This total love reaction goes into two channels: first, the love of the opposite sex, and this love, when given proper and free play, leads to mating, marriage, home, children and a certain degree of selfishness. This selfishness is largely built upon the fundamental craving of the individual to continue his kind in the world.

The second channel in which love of the individual goes, homo-love, leads to love of the same sex. When the individual is well-conditioned and comes out of a home with only a reasonable amount of repression and training, he lifts the love of the same sex to a high plane—that is, he "sublimates" this love. He lifts this type of love to a plane of service to mankind. This type of love leads to various forms of art, to the establishment of the various secret societies and lodges, and, in general, makes man the humanitarian individual which he becomes. The sublimated homo-lover becomes the loved and useful citizen in the community.

There is a certain group of people who, through inheritance, environment or accident, find themselves, after puberty, with a vast amount of homo-love. So great is this homo-love that they seek expression in frank love attachments to the same

sex. We frequently call these individuals degenerates, but in justice we should call them ill. We frequently discover this class of people without delusion, without hallucinations and without nervousness. Without self-condemnation, the homo-lover does not develop a psychosis.

Then, there is a great class of people who fail to transform their homo-love into art, music and service to mankind—they fail to sublimate. Also, they are so conditioned that they cannot seek love outlets with the same sex; then, there is one thing left for them to do and that is for them to drive this love craving into the unconscious where it lives and operates without restraint. Because homo-love is entirely unacceptable to the ego, the only sensation which the individual experiences is hate. When he converts this unacceptable love into hate, this transforms him into an individual living in a sea of suspicion, hate and jealousy and full of paranoid delusions. In our present civilization homo-love receives the greatest of taboos, and because of these taboos this homo-love becomes unacceptable to the individual. This repression of homo-love is the greatest of all etiological factors in the development of paranoia. (See Ferenci of Vienna.)

For the sake of discussion we will divide paranoia into three stages, and in so doing we will follow the method of Dr. William A. White in his "Outline of Psychiatry." The first stage "*He flees*," in the second stage "*He defends*," and in the third stage "*He attacks*."

In the first stage the individual frequently develops a large number of physical symptoms of dizziness, various and indefinite pains frequently referred to the intestinal tract, and various parts of the body. The individual in this stage worries about himself a great deal—he becomes very hypochondriacal and sometimes he becomes very much disturbed and depressed. It is possible that in this stage he may feel that he is losing his mind and that he is very ill and may commit suicide. Also, in this stage he develops "*ideas of reference*" in that he believes that a great deal of his environment refers to him. If he hears other boys laughing and having a good time he is sure that they are laughing at him. He reads into the various acts of his playmates and fellows a constant reference to himself. In this stage he feels very inferior and is very unhappy.

At this point it is well to ask the ques-



tion, "should physical symptoms that are purely psychogenic in origin ever be relieved by suggestion that comes from the administration of drugs or a placebo?" Is it safe to take these symptoms away from either a hysteric or a paranoid individual in the first stages? My own experience is that if these symptoms are taken away from these individuals, the individual plunges into a more serious mental mechanism—that is, that when we relieve the physical symptoms, the mental symptoms become worse; he must atone for his unconscious sense of guilt and I have seen many cases where a physical symptom has been removed by a surgical operation or a powerful suggestion, plunge into a definite malignant psychosis. These cases are so numerous that they are removed from that field of reasoning known as "after which, therefore because of the which." Don't remove a beloved symptom excepting by analysis. One case comes to mind in which a woman for several years had severe symptoms referred to the pelvis. Upon examination her pelvis was normal; she had had three children, but the surgeon assured her that her nervousness would be cured if she had a slight tear of the cervix repaired and her tubes buried. This was done. She lost her beloved symptom, but developed a serious psychosis in which for six months she lived away from her family in order not to kill her children. The beloved symptom of the hysteric when removed by suggestion, is followed by a worse symptom.

In the second stage the individual firmly believes that he is defending himself; that he must defend himself. He believes that he must spend considerable part of his time in fighting off his enemies, not knowing or realizing that his enemies are imaginary. He begins to feel that people are persecuting him—that they are saying all manner of things against him. He believes that his fellows are calling him low and vile and vulgar names. During the war we had many such examples in which the soldier would be brought into the nervous disease ward having heard his fellows calling him vulgar and vile names. In these cases the homo-love content became split off from the rest of the mind and this split-off portion accused the individual of doing that which the individual wanted to do—that is, this split-off portion accused him of yielding to a homo-love craving. Frequently these men would be in a serious panic, and as Dr. E. J. Kempf in his "Psychopathology" calls this

stage or state, "homo-sexual panic". During this stage he becomes more and more convinced that the Masons, the Odd-Fellows or Catholics are framing against him. However, these delusions are not entirely fixed; he may not be perfectly sure of his delusions. He is most unhappy in this condition and frequently runs away; however, the most of the running is done in the first stage. He may go from place to place in an endeavor to escape his unknown tormentors. About this time, however, he begins to recognize, in an indefinite way, some of the people responsible for his tormentings. He is now getting ready for the final stage, which follows:

In the third stage the individual is thoroughly saturated with hate; that is, in his conscious mind he feels hate. While in the unconscious, he feels love. In this stage he feels only a colossal hate. He is sure in this stage he recognizes the individual or individuals responsible for his persecution. In other words, his delusions are becoming systematized and fixed. In this stage he frequently refines himself by losing a vast amount of his apparent masculinity. He approaches a stage of refinement in which he has purged himself of masculine sensations. In this stage the development of the mechanism of "projection" becomes very evident. He takes his own hate and projects it into the mind of the persecutor. He does not realize that he is doing the hating, but says that his persecutor is doing the hating. In this stage he goes out and apparently seeks an enemy. He frequently takes the most innocent man in his environment and converts him into an enemy. By the mechanism of projection this enemy is hating him and is planning his (the patient's) downfall and usually his murder. At this stage the patient frequently kills. He may commit two or three homicides before the true mental condition is recognized. Patients with this disease are *very* dangerous to their environment, but usually not to themselves.

I have in my office a book that was written by a professional man upon his "Trials and Tribulations". This book carries through fifteen years of this man's life, detailing in a classical manner all three stages of this disease. At first this man began to move about; second he remained stationary and fought his environment and defended himself. Although he was the superintendent of the Sunday School he frequently had fights, and later, he apparently sought trouble and killed an adver-

sary. He was arrested and tried for murder and made such a splendid appearance upon the stand that his attorney thought it would be prejudicial to have his mental condition explained to the jury. They thought the case was won, but the jury brought in a verdict of "guilty," and this patient received a sentence of twenty years at hard labor in a penitentiary in an adjoining state.

In the discussion of paranoia it is well that we mention Freud's "Discussion of Jealousies". Professor Freud divides jealousies into, first, a *normal jealousy*; second, a *projected jealousy*; and third, *delusionary jealousy*. Men working in psychotherapy soon become aware that there is a small amount of jealousy which is normal. Jealousy which comes out of the home, and which fortifies the individual against allowing outsiders to come into his home and to wreck that home; however, of the great amount of jealousy which exists in the world, the normal jealousy represents only a small percentage. The projected jealousy is an entirely different mechanism. The individual himself becomes untrue to his mate, or double-crosses his associates. In a case of that kind the individual is almost sure to accuse his mate of infidelity, or to accuse his associate of being dishonest. This type of jealousy compels the man who has an illicit love affair to accuse his wife of also having an illicit love affair. He will return home and almost of a certainty accuse his wife of wrong-doing; and a wife who has an illicit love affair, in turn, accuses her husband of loving his secretary. This mechanism furnishes a large amount of jealousies. The greatest percentage of jealousy rests upon delusion; that is, the jealousy is delusionary and founded upon homo-love which is repressed into the unconscious. This jealousy is not affected by reason, because, as we see at once, it is founded upon a false premise; that is, it is founded upon hate which has no foundation in reason.

Dr. White, in his "Outlines of Psychiatry," divides the delusionary system of paranoiacs into *inventive*, *reformatory*, *religious*, and *erotic*, showing the content of the delusion. It is a well known fact that many paranoid individuals do succeed in discovering some really worth while inventions. For example, it is said that the inventor of the linotype machine died in a sanatorium. It is also known that many men seeking perpetual motion are paranooids. Many paranoid individuals go into

reformatory work. They are going to reform the world, or going to change the established methods of thinking, or are going to make the world a sanctified place in which to live—some of them become very religious and preach several times during the week. Frequently such people break and live in a state hospital, and, occasionally, they find an excuse to kill. Then, too, the erotic type builds up the delusion that some prominent woman is in love with him—that the President's wife, or the governor's wife, or the leading society lady, or the leading actress is enamored of him, although he has no proof. This love affair is purely a one-sided delusion in which the patient frequently annoys the woman, and frequently is arrested and placed in a hospital because of that annoyance.

At this point we should discuss the will. For hundreds of years we have been holding the individual responsible for his acts, no matter how sick he is. In the study of mental diseases and mental disorders, one is confronted with the question, is there a will? When people are well they certainly can will themselves to do or not to do, at least to a moderate extent, but when people are sick, and the victim of a mental disorder or nervousness, the hypothetical thing, which we call a will, begins to disappear, and in severe mental disorders the unconscious mind takes possession of the individual so that the *will* and *reason* are both dethroned; or, might be better to say that the individual is entirely in the control of the unconscious emotions and that intellectuality never saves an individual from asocial acts; we may say that the mentally ill have lost their will and that they are no longer controlled by reason, but are controlled by their fears and hates which reside in the hypothetical thing which we call the unconscious mind. We formerly said that the mentally ill were possessed of devils. We can further say that the individual, sick or well, does the best which he or she can do with the mind which they possess. If they are in the hands of a serious paranoid mechanism they are almost sure to do serious acts before they are recognized, which acts are entirely out of the control of the so-called will.

The following cases show both the homo-love and paranoid trends: The first case to be mentioned is a young man twenty-six years of age, who became a great scientific investigator and who, at the time of being referred to me, was holding a



scholarship in a university. He became very nervous, disturbed and panicky. Although he came for treatment, he was very reluctant to discuss his life. He finally did unload to a moderate degree, in which he mentioned some primitive dreams. I asked him to give me the dreams, which he refused to do; however, later in the treatment he gave the dreams which proved to be purely homo-sexual assaults. Comparatively early in the treatment this patient told me that his "chief," under whom he was doing his research, was persecuting him, and he finally admitted that he had planned to kill this benefactor and father-substitute. At periods in the treatment he would become very threatening, and at times I was compelled to give him a vacation because it was unsafe to allow him to come to the office. This man made a fairly comfortable readjustment, and the last I knew he was seeking a Ph. D. degree in an Eastern university; however, he never did fully and completely accept of his homo-cravings, and I feel that the prognosis in this case should be very guarded.

About two years ago two young men came separately for treatment. These young men proved to be pals, but neither knew that the other was coming for treatment. One of them readily accepted of his homo-cravings. He had had several homo-experiences without condemnation and readily accepted of himself. He later married and apparently is doing very well in his home. The other man, very highly educated, and master of seven languages, came because of homo-fantasies, together with mental disturbance; in other words, he, too, was in a homo-panic. He freely discussed his relationship with the other patient. For a long time he had great fear of losing the love of this individual who had been at one time his sweetheart. After thorough study and discussion of his cravings he accepted of himself and now, after a year, is remaining very comfortable. He has not married but frequently discusses the possibility. These two cases bring out very definitely and positively homo-cravings, partially conscious and partly unconscious, and their effects upon the personality. These latter two young men are now quite comfortable in their environments.

There are worlds of people with mild and moderate paranoid trends who live in a more or less of a turmoil in their environment. Such people are constantly misinterpreting their friends and fellows,

and such patients are constantly developing trouble in their environment. Because of their unconscious states, they set friend against friend, and neighbor against neighbor. They usually seek a level in which they are despised and hated by their fellow-men because of personality traits over which they consciously have no control. This type of mental disease is the most malignant and dangerous type with which the human being is afflicted, and any psychiatrist who attempts to do psychotherapy in these cases runs a great danger of a serious assault.

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#### SYMPTOMS IN EARLY STAGES OF INDUSTRIAL PLUMBISM

In dealing with the problem of industrial plumbism, Roy R. Jones, Washington, D. C. (Journal A. M. A., Jan. 19, 1935), believes that emphasis should be placed on those signs and symptoms commonly exhibited early in the course of absorption or intoxication. All observations should be considered in their relation to the entire clinical picture in order to arrive at a diagnosis, especially in the preintoxicative stage. All changes, listed as presumptive evidence should be thoroughly investigated. From a practical point of view it is believed that, by careful watching for an early reticulocyte response, the physician will be able to detect evidence of lead absorption prior to the development of definite plumbism.

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#### ULCERATIVE COLITIS: II. FACTOR OF DEFICIENCY STATES

Thomas T. Mackie, with the assistance of Miss Madeline Henriques, New York (Journal A. M. A., Jan. 19, 1935), observed evidence of deficiency states in 62.6 per cent of seventy-five cases of chronic ulcerative colitis. These indications find expression in the buccal and lingual mucosa, the skin, the type of anemia and the blood chemistry. When present in advanced degree they have invariably been associated with characteristic changes in the small intestine. Secondary, or conditioned deficiencies appear to be important factors in the pathologic physiology of the disease. Therefore deficiency disease is not to be regarded as an occasional complication of chronic ulcerative colitis. It seems more probable that it constitutes an essential part of the underlying mechanism. With the appearance of indications of deficiency disease the pathology changes; the symptoms become more complex, the clinical picture more severe, and the prognosis more grave. In many instances the evidence does not permit definite evaluation of the part played by single vitamins or specific food substances. The clinical phenomena suggest, however, that the deficiencies are multiple rather than single. Inadequate supply of vitamins A, B<sup>1</sup> B<sup>2</sup> and possibly D, together with lack of biologically complete protein, and of electrolytes, appears to contribute to the complex clinical picture in varying degree. The progress that many of the patients have shown under prolonged observation suggests that the potentially severe and untreated or imperfectly treated case tends to pass through three stages. In the initial phase clinical evidence of deficiency disease is lacking. The second stage is characterized by the appearance of early signs of deficiency. In the third stage, which is relatively rare, deficiency disease is severe and tends to dominate the clinical picture.

## PARATHYROIDISM\*

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Within the past few years there has developed a wide-spread interest in the study of the clinical manifestations of disturbances of the parathyroid glands. Interest in the complex syndrome has extended to internist, biochemist, orthopedist, surgeon, pathologist and radiologist. It is largely due to the cooperation of these various groups that the growth of knowledge of the subject has been so rapid and so extensive. The literature is abundant in all of the fields of medicine and surgery bearing a relation to the subject.

Parathyroidism is a term used to define a clinical condition due to excessive activity of one or more of the parathyroid glands. The term that has been used and is still in use by some clinics is hyperparathyroidism to distinguish the condition from hypoparathyroidism or complete parathyroid deficiency which is associated with the clinical state of tetany. It is a curious fact and one explained only, perhaps, by the lack of experimental chance that overfunction of these glands was considered as a clinical possibility only many years after the discovery of the tumors either occurring alone or in conjunction with specific bone lesions which have since been known to characterize the condition.

Comparable states of over and under function of other endocrine glands have been known and studied for many years. One of the most important of these is the thyroid gland, the function of which, together with the clinical manifestations associated with change in activity is familiar to the general practitioner. The role of the parathyroid gland in the regulation of the chemistry of the body has not until recently been clearly understood. The knowledge of the chemistry of tetany has done much to dispel illusionary ideas of the mechanism of this state of neuro-motor irritability. Its relation to parathyroid deficiency was noted in 1896 by Vasale and Generali. Indeed, it was the application of biochemistry to the study of the cases presenting tumors of the parathyroid gland that solved the riddle of the

obscure bone lesions that had been heaped together into a most heterogenous diagnostic mound.

The history of the development of our knowledge of parathyroidism as manifested chiefly in the classic forme, i. e., osteitis fibrosa cystica of von Recklinghausen is extremely fascinating. Mandl in 1925 in Vienna and Du Bois in this country in 1926 opened the way for the study of the relationship of the parathyroid gland to chronic bone lesions. In the surgical removal of an enlarged parathyroid gland accompanying bone lesions of many years duration, Mandl closed the door on the blind quest of those who looked in vain for the causative factor in certain chronic bone lesions and opened it again on a field of experimentation which has stood out as one of the amazing events of modern medicine.

The ancient history of chronic bone lesions of the decalcifying type, begins no doubt, with the dawn of the ages, for specimens of bone found in the ruins of ancient Greece and Egypt and in the pre-Columbian remains of this country would indicate that a bone disease similar to that related to over function of the parathyroid was existent even in those times.

Von Recklinghausen in 1891 described the osseous changes of the disease which has been called generalized osteitis fibrosa cystica or osteitis fibrosa cystica multiphasata.

However, long before the description of this well advanced bone condition characterized by cysts, bone tumors and general decalcification was presented to the medical world, other conditions characterized by disturbances in calcium had been reported. The chief of these was osteomalacia which was not in the early stages more than a term for all disturbances of bone characterized by softening. *Fragilitas ossium* was introduced in 1833 by Lebstein, as a term to describe all cases of fragile bones, both the constitutional type and those due to metastatic carcinoma.

One of the earliest descriptions of the lesions later identified as due to parathy-

\*Read before the Section on Medicine, Annual Meeting, Tulsa, May, 1934.



roid overfunction is attributed to Stansky in 1839. He described the bone cysts in tibia and fibula with great accuracy.

Numerous other reports of similar conditions appeared in the next few years and among them was found several descriptions of giant cell tumors. Most important of these were Robin in 1894, Kolliker in 1850 and Nelaton. These cases were diagnosed as osteomalacia.

In 1877 Paget described a condition of bones characterized by thickening with softening and bending. Much confusion has existed in the diagnosis of the two diseases, Paget's disease and parathyroid deficiency, though the chemistry of the two is sufficient at this time to differentiate them.

Askanazy in 1904 suggested the possible relationship of the parathyroid gland to bone dyscrasia. He reported as Paget's disease, a tumor of the parathyroid gland occurring in conjunction with a bone condition.

It was Erdheim, however, who in his report of 1907 focused attention more definitely on the parathyroid gland. He reported the presence of tumors of the glands in several cases of osteomalacia and rickets which confused the situation for some period of time. He was inclined to the belief that the enlargement of the parathyroid glands in these cases, diagnosed osteomalacia and rickets, was due to a compensatory hypertrophy, secondary to the bone disease. Numerous articles appeared thereafter in the literature describing various bone states associated with enlargement of the parathyroid glands. Among these were Paget's disease, osteomalacia, rickets, osteitis fibrosa cystica, senile osteoporosis, multiple myeloma, metastatic carcinomata in the skeleton.

In 1923-1924 Collip and Hanson, working independently, isolated an extract of the parathyroid gland which experimentally would increase the calcium content of the blood, depress the phosphorus content and increase the excretion of both. The relationship between the parathyroids and calcium-phosphorus metabolism was thus established on a more definite basis, the discovery leading to widespread experimental work on animals. Clinical states of acute or chronic hyperparathyroidism were produced by the injection of parathormone with resultant bone changes identical with those of Recklinghausen's disease.

This groundwork of many years duration was responsible for the work of Mandl in 1925, who reasoned that there must be a relationship between the bone lesions of osteitis fibrosa cystica and the frequent occurrence of the parathyroid tumor. Schlagenhauer in Vienna in 1915 had suggested extirpation of parathyroid tumor for osteitis fibrosa. This differed from the views of Erdheim who maintained the idea of the compensatory hypertrophy of the glands in osteomalacia disturbances. Surgical removal of a tumor by Mandl in a true Recklinghausen's disease produced clinical improvement with a sudden diminution of the urinary excretion of calcium and a lowering of the blood calcium.

Following this report numerous cases of a similar type began to appear in the literature so that the relationship of parathyroid overfunction to Recklinghausen's disease has been fairly generally accepted.

#### PATHOLOGY

The parathyroid tumor is inconstant in size, location and activity. The size is no true index of its activity for cases of bone disease of the type we are considering have been found associated with simple hyperplasia of the glands with slight or no visible evidence of enlargement. The location of the tumors is variable, a fact which may create a problem in the surgical removal of the glands. They may be located in the tracheo-oesophageal spaces, imbedded in the thyroid gland or they may be found in the superior mediastinum.

The enlarged parathyroid tumor is usually nodular and cystic. "The microscopic appearance of such an enlarged parathyroid may in places be so changed as to lose all semblance of normal parathyroid tissue" (Jaffe, H. L.). Changes in cells and nuclei are observed, evidenced as enlargements, variations in density and multiple nucleation. Normal principal cells may be seen in the midst of the degenerative area. The microscopic pathology of the tumor may be said to be characterized by lack of definiteness.

The bone pathology which is the major manifestation of overfunction of the parathyroid glands has been the object of prolonged study and has been provocative of much discussion. In a presentation of this type an extensive review of the discussion of the pathogenesis of the bone lesions is hardly in place. The bone changes are due to demineralization of the bone caused by rapid mobilization of calcium

and phosphorus and an increase in the elimination of both. The speed of the process may and does vary, depending upon both internal and external factors which will be mentioned later.

The action of the parathyroid hormone in the above process has not been satisfactorily determined. It may serve to dissolve the mineral salts at the surface of contact between tissue fluids and bone.

In all the bone lesions the dominant cell is the osteoclast to which is assigned the function of bone destruction. This absorption of bone may be effected directly by osteoclastic activity without a preceding process of decalcification or the osteoclast may produce its effects only after the ground material disappears. In the lesions of Recklinghausen's disease, bone destruction is accompanied by bone formation. The destruction is so rapid that it may take place even in the presence of new bone formation. The rate of progression of both conditions determines the development of the ultimate pathologic state which for the most part is one in which the original bone tissue is replaced by fibrous tissue.

Giant cell tumors or bone cysts frequently develop, resulting in the clinical pathology as mentioned. Giant cell tumors or osteoclastomas are due to a proliferation of the osteoclasts. They may be accompanied by defects in the fibrous area of long bones producing cysts. Jaffe describes the giant cell tumors as follows: "Nests of giant cells in a fine fibered marrow which also contains numerous granules of blood pigment. These brown giant cell masses are composed of spindle cell connective tissue stroma. The giant cells which may be so numerous as to overshadow the supporting stroma completely, are identical with the osteoclasts, they have phagocytic activity and often contain changed red corpuscles or hemosiderin." The giant cell tumors may terminate by healing with sclerosis, spontaneous disappearance or cyst formation.

The bone changes may occur in all parts of the body. Many factors influence the rate and extent of involvement. The epiphyseal ends of the long bones are the common sites for localization of bone tumors and cysts. Spontaneous fracture may occur at these sites.

The vertebral column may present a kyphosis, scoliosis or a "fish-like spine". Extensive deformities of the chest or pelvis and consequent functional disturbances

may follow lesions of the ribs and sternum. The metatarsals and metacarpals may contain cysts and giant cell tumors. The skull presents a diffuse osteoporosis with marked pliability. The contracture and renal insufficiency often seen associated with hyperparathyroidism is no doubt due to changes caused by excessive excretion of calcium. Calcium is frequently seen microscopically in the tubules of the kidney. Urinary calculi have been reported and calcification may be found in other parts of the body, such as lungs, gastro-intestinal tract, ligaments of spine, abdominal glands and the special groups.

#### CHEMISTRY

Special changes in metabolism manifest themselves with the progression of the disease. Certain diagnostic facts might be unearthed very early in the disease if a routine calcium determination were made on all patients. The outstanding change in the metabolism is in the increase of the calcium in the blood which may normally range from 9 to 11 mgms. per 100 cc. Many series of cases show a calcium range from 11.5 to 16 mgms. and as high as 23 mgms. in some cases. Accompanying the elevation of blood calcium there is a reduction in blood phosphorus from the normal level of 3.1 mgms. per 100 cc. to 1.5 mgms. or even lower. This change in the concentration of these minerals in the blood results in an increased excretion in the urine. A low renal threshold is assumed for the phosphorus. Cases have been reported in which there is no change in these elements. The excessive excretion of calcium results in a "negative balance". Where renal complications together with evidence of uremia exist, the blood chemistry shows definite elevation of the phosphorus and reduction of calcium with an elevation of the non-protein nitrogen of the blood. This will no doubt confuse the true picture of Recklinghausen's disease.

The output of calcium may be seven to eight times greater than that in the normal individual. This may occur even with a diet low in calcium. These changes in metabolism may be duplicated in the normal individual by the injection of one hundred units of parathormone daily. Continuous injections may result in elevation of phosphorus producing signs of renal deficiency.

Other resorptive bone diseases present changes in the blood chemistry. Multiple myelomata and metastatic malignancy are accompanied by a high calcium content of



the blood, but phosphorus content is likewise elevated. Rickets and osteomalacia are often associated with low phosphorus values, but calcium is likewise low.

Plasma phosphatase is an index to the degree of osteoclastic activity and is elevated in the overfunction of the parathyroids. The normal values are two to four units per 100 cc. of serum. In active cases this value may reach six to twenty units. It is likewise increased in Paget's disease and rickets.

#### CLASSIFICATION AND SYMPTOMS

The type of pathologic process determines to a large extent the symptoms and in turn will assist in the classification of this disease. Symptoms are also modified by the duration and rapidity of the disease which varies with the degree of activity of the adenoma of the parathyroid, the rate of elimination of calcium and phosphorus, the amount of calcium ingestion and the possibility of intercurrent infection. Hence symptoms may be vague and indefinite extending over a period of years before progressing to the point of producing complete disability. The clinical syndrome may be extremely confusing, being classified only by proper chemical studies of the blood.

The classification of the disease as suggested recently by Albright, Aub and Bauer is very complete and practical: (1) Classic hyperparathyroidism (von Recklinghausen's disease) skeletal symptoms predominate and consist of decalcification, cysts, tumors and eventually fractures. (2) Osteoporotic form of hyperparathyroidism-presenting symptoms are due to generalized decalcification and there are no cysts or tumors. (3) Hyperparathyroidism with nephrolithiasis-presenting symptoms are associated with renal stones and there may be no gross skeletal changes. (4) Hyperparathyroidism with renal insufficiency (nephrocalcinosis) the symptoms are those of Bright's disease. (5) Acute parathyroid poisoning—this is a condition simulating acute parathyroid poisoning in dogs with sudden death and characteristic pathologic changes. (6) Hyperparathyroidism simulating (or complicated by) Paget's disease. The existence of this group is not yet certain.

From the above classification a fairly definite clinical picture may be constructed which of course can never be absolutely clear cut for any of the separate groups.

With involvement of bones the import-

ant presenting symptom is pain. It varies in appearance, character and duration. It may be present throughout the body or become localized in bones and joints of the lower extremities. Pain in the vertebral column is not uncommon and may serve to produce a confusing clinical syndrome giving rise to serious diagnostic difficulties. The persistence of the pain is a characteristic that leads us to a belief in the seriousness of the underlying condition. It may persist in spite of all common therapeutic measures directed towards the relief of an assumed arthritis or neuritis. Tenderness on pressure over bones and joints frequently accompanies the pain. It is aggravated by movement.

Pathologic fractures occur in diseased bone, in fact may be the first indication of the disease process and indicate some underlying change in the bone, such as cysts or giant cell tumors. Enlargements of the bone may or may not precede the fracture. With involvement of the vertebral column certain deformities may occur, such as lordosis, kyphosis, scoliosis or change in shape of the thoracic cage.

The constitutional symptoms of greatest importance are muscular weakness, fatigue and general hypotonia. Exhaustion may result in great difficulty in executing muscular movements and the hypotonia may permit unusual movements of the bones and joints. The decrease in electrical irritability of muscles and nerves, an important factor in the exhaustion syndrome is definitely related to an increase in blood calcium. Tetany presents the opposite picture.

The gastro-intestinal symptomatology is variable. Constipation is often associated with hypotonia. Nausea and vomiting are infrequently symptoms occurring intermittently throughout the duration of the disease, seldom characteristic they are frequently associated with the periods of acute parathyroid intoxication or with the development of uremia. Anorexia with consequent loss of weight may result in severe general complications.

Renal involvement is manifested either as extensive renal damage with consequent nephritis or as a condition of renal stone formation with subsequent renal colic. The symptoms express the underlying pathology. Uremia may be the deciding factor in the postoperative outcome and is not an uncommon complication. Polydipsia and polyuria accompany the increased excretion of calcium and phosphorus. The

increased fluid output may result in enuresis and nocturia.

#### X-RAY DIAGNOSIS

The value of the radiogram in diagnosis is based upon the fact that Recklinghausen's disease is not only a polyostotic, but a generalized disease of the bone and hence the primary manifestation is increased radiability, due to progressive thinning of the bone. This may be evidenced in all of the bones of the body to a greater or lesser degree. Radiability of the bones depends to a large extent upon the rapidity of the process of decalcification. Marked connective tissue proliferation in the marrow follows rapid resorption of calcium. This occurs no matter what the etiology of the process and results in generalized osteitis fibrosa. Decalcification proceeding at a lower rate results in a less marked resorption, producing the lesion of osteoporosis, characterized by an absence of extreme fibrosis.

Camp has mentioned military mottling and granular appearance of bone which is due to the resorption and the appearance of newly formed trabeculae in the connective tissue replacing the bone. This is seen commonly in the skull where the appearance varies with changes at times suggestive of Paget's disease.

The secondary changes in the bones giving x-ray evidence of value in diagnosis are tumors, cysts, deformities and fractures. It is to be noted that all cases of hyperparathyroidism do not necessarily present tumors, cysts and fractures. The cysts may be multiple with expansion of the overlying bone. They may be found in metatarsal and metacarpal bones. Fractures usually occur through cysts or tumors, but may occur in areas of osteoporotic bone. The tumors occur at the ends of long bones and in the ribs.

Urinary calculi or calcification within the kidney parenchyma may present themselves.

The important fact that may well be stressed in regard to the x-ray is the injunction to the radiologist to be on the alert for cases showing increased radiability of bones, so that proper clinical and chemical studies may be made to complete the diagnosis.

#### DIFFERENTIAL DIAGNOSIS

Certain diseases presenting bone changes either local or general must be differentiated from Recklinghausen's disease, although since the development of the blood

chemistry in these diseases whereby blood calcium and phosphorus may be readily estimated and hypercalcinuria and hyperphosphaturia determined, so that the calcium and phosphorus balance may be established. It is possible for two or more diseases to exist in combination and when this occurs, each may be diagnosed separately.

The diseases which may be confused can be grouped into those presenting general osteoporotic bone changes and those presenting local changes, solitary or multiple. Of the former the most common are osteomalacia, senile osteoporosis and osteogenesis imperfecta, while the latter includes Paget's disease, solitary cysts, solitary benign giant cell tumors, metastatic malignancy and multiple myeloma.

Senile osteoporosis is characterized by a general thinning of the bone with increased radiability which may be confused with parathyroid bone changes, particularly in the milder manifestations of the latter, where the blood values show no marked variation from normal. Usually in the former the serum calcium is normal while the serum phosphorus is slightly reduced. Biopsy may be necessary to differentiate the two conditions. The absence of marrow fibrosis and osteoclasts is distinctive of the senile type.

Osteomalacia, a vitamin D deficiency disease, is seldom seen in this country. It is characterized pathologically by a failure of calcification of the osteoid bone tissue which is general and results in an increase in radiability. Fractures do not tend to occur, but bending of bones is more common. The serum calcium is low or normal, the serum phosphorus is low.

Osteogenesis imperfecta fragilitas osium also presenting generalized osseous defects with associated fractures is hereditary and pathologically shows a depression of osteoblastic activity with normal osteoabsorption. Serum calcium and phosphorus are normal.

Paget's disease (osteitis deformans) may present certain more pronounced difficulties than the preceding diseases owing to the fact that we occasionally find cases of hyperparathyroidism in whom bone thickening may occur in the skull. Paget's disease is not generalized, although polyostotic and progressive. It tends to involve the weight bearing bones. The bones are hypertrophied, such as the skull, sacrum and occasionally the cortex of long tubular bones. Giant cell tumors



are absent, parathyroid glands are not commonly enlarged and the blood calcium and phosphorus are normal or slightly elevated, the latter tending to parallel the former.

Single cysts, which may be "multiple," are distinguished by the absence of additional bone disturbances and the presence of normal blood calcium and phosphorus. The benign giant cell tumors may be isolated or may occur as a phase of hyperparathyroidism. They frequently appear in the epiphyses of the long bones. The differential diagnosis may rest upon the values of calcium and phosphorus in the blood.

Multiple myeloma may closely resemble radiologically, the lesions of Recklinghausen's disease. The cystic areas are as a rule smaller and more punched out. In the skull they may present a "swiss cheese" appearance. The mottling, however, may be fine, involving many bones. Renal changes may develop in these cases, offering further diagnostic difficulties. The diagnosis may depend solely upon the biopsy. Serum calcium is usually elevated while serum phosphorus may or may not be changed. The Bence-Jones proteinuria is additional evidence of the presence of myeloma.

Metastatic malignancies as a rule offer little difficulty. Hypercalcemia may develop, but the phosphorus content remains unchanged.

#### TREATMENT

The methods of treatment have been discussed in many of the numerous papers in the literature. It is not my intention to go into detail in this matter. When the diagnosis is made, surgery should be employed to remove the offending tumor. It is sometimes difficult to discover the tumor owing to its aberrant tendencies and certain areas should be searched such as the tracheo-oesophagus spaces, the thyroid gland itself and the anterior mediastinum. It is generally considered inadvisable to remove normal parathyroid glands with the hope that they may effect some change in the pathology. Later discovery of the tumor and its subsequent removal may result in tetany. Tumors may be multiple and should be searched for and removed at the time of the operation.

Albright, Aub and Read recommend a sub-total resection of the parathyroid tumor in cases showing extensive bone lesions in an effort to avoid the development

of tetany. The treatment of tetany follows the usual procedures which will not be discussed here.

Roentgenray therapy has been reported successful by some clinicians and unsuccessful by others. Our own experience has been limited. A personal communication in an unreported case from Doctors John Hammond and J. C. Peden of St. Louis states that they have had singular success in a case of hyperparathyroidism in which it was not possible to remove the parathyroid glands.

#### SUMMARY

1. Generalized osteitis fibrosa cystica (Recklinghausen's disease) is due to overfunction of the parathyroid glands associated with adenoma of the glands.

2. Hyperplasia of the parathyroids may be found associated with other clinical bone conditions such as osteomalacia, multiple myeloma and metastatic carcinoma of the bone.

3. The symptomatology of this disease is not essentially typical, but persistent bone pain, unrelieved by ordinary therapeutic measures should indicate the necessity for further x-ray and chemical blood studies.

4. The existence of renal calculi alone or associated with changes indicative of nephritis should suggest the possibility of an underlying parathyroidism.

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## AN EXPLANATION AND EVALUATION OF PROSTATIC RESECTION ADDRESSED TO THE GENERAL PRACTITIONER\*

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MUSKOGEE

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While prostatic resection is no longer a new procedure to the medical profession and since so much has been written and said pro and con that any doctor who pretends to keep abreast of the times must know something about it, still the very fact that so much discussion of this procedure has gone on has left a very confused idea in the minds of many general practitioners as to the exact possibilities of prostatic resection.

Recently I had referred to me a man from a nearby town who came in with the impression, apparently given him by his doctor, that I would resect him and let him return home that same day. It is to correct such impression and to give the doctors a clearer idea of the real value of resection that this paper is written.

It is not the general practitioner who is to blame for these false ideas, but resectionists who have been too enthusiastic in extolling the simplicity of the procedure, certain instrument men who in order to sell their machines would have every doctor believing he could do resections, and, last, actually, patients who have been resected.

Because a new and extremely ingenious method has been developed for the relief of prostatic obstruction does not mean

that we may throw into the scrap heap all that our father urologists have learned about prostatic surgery. By this I mean we still have to pay attention to the underlying pathology and we still have to study the patient's condition and prepare him for operation and having resected him we still have to observe certain rules in order to avoid complications and disasters. Keeping all these things in mind and adhering to them just as strictly as did the prostatectomist to his rules, we find that with resection we are apparently getting better results than were obtained with prostatectomy of either type.

First, all authorities have agreed that resection is not a procedure for the occasional operator but requires a trained operative cystoscopist who has made a thorough study of the procedure and its pitfalls.

The next thing is that the patient requires adequate preoperative preparation. If there is no or only mild infection, slight retention, good kidney function, no nitrogen retention and the cardio-vascular system is in good condition, resection can be carried out at once. If there is several ounces of residual, or marked urinary infection or definite reduction of kidney function or retention of nitrogen or evidence of cardio-vascular disease a period of catheter drainage is advisable until the conditions have improved as much as pos-

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sible. In severe infection, debility or severe cardio-vascular disease it is advisable to do a suprapubic drainage as this is the surest way of establishing thorough and adequate drainage and clearing up the infections. It is a fact that these severe infections do not clear up well under catheter drainage. Often it is necessary to return these patients with suprapubic drainage to their homes for months and then have them come back later for resection. Some urologists claim that where a suprapubic drainage is done they see no reason for doing a resection but believe in finishing the operation by suprapubic prostatectomy at a later date. If the suprapubic drainage was necessary (as stated above) there is no doubt in my mind but that prostatectomy will carry a large mortality and I am certain that I have resected such cases that could not have stood enucleation of the prostate.

It is the opinion of most urologists that the very large prostates are not good subjects for resection. This seems reasonable but the huge prostate represents only a small per cent of prostatic cases. However, there is an imposing list of men of the highest repute who are doing resection in from 95 to 100 per cent of cases. I have not in my modest series yet had to resort to prostatectomy since I started resection work. However, I hope to remain open minded and if I find a case where I believe it to the patient's advantage to have prostatectomy I shall advise it. The great difficulty is that there is fast coming a time when all prostatic cases are going to be deaf to all arguments for prostatectomy and are going to demand resection. From their standpoint you cannot blame them for there is no doubt that prostatectomy is an appalling operation to them, and now days the patient nearly always knows some one who has gone through it and has no very pleasant memories of it, while the majority of resection cases remember chiefly the relief they got and that there was very little suffering from the procedure. The more we doctors try to understand the psychology of our patients as well as the treatment of their ills, the more successful we will be and the sooner the general practitioner learns to refer his prostatic cases to competent urologists for their opinion, the sooner he will have them stop streaking off to parts unknown for that advice and when a patient goes without your help you are apt to have lost him for good.

Another point in favor of resection is

that it carries with it so few disagreeable features as compared with prostatectomy that you may not hesitate to advise it in the early or border-line cases which have only few symptoms, very little or no residual, and the kidneys have not been subjected to back pressure for years. These cases refuse any talk of prostatectomy. I believe this to be the greatest benefit that resection will accomplish for it will do away with one of the fears of becoming old and will lessen the number of severe prostatic cases seen in the future.

With regard to the disability of the patient from his daily labors there is little argument that resection has much less than prostatectomy. The period of preparation may be shorter in most cases saving a few days but the period of operation and convalescence is greatly reduced. I have done resections on medium sized prostates and had the patient back at work in good physical condition in six weeks, and even less. Such a case is not rare with resection, while with prostatectomy I should say such a case, if we are honest, is extremely rare. In cases of resection without complications and who live in our city I usually permit them to return home from the hospital at the end of a week postoperative, but keep them under observation. Those living out of the city I keep for about sixteen days or longer. This is because cases of severe hemorrhage have been reported about the tenth to fourteenth day. I have had none and believe that the hemorrhage factor of resection has been greatly overrated if certain precautions are taken. Those who have hemorrhage frequently can look to errors in their technique or postoperative care of the patient for the cause.

With regard to mortality we find that the death rate in resection is much less than in prostatectomy. The pioneers in resection work have reported quite large mortality in their early cases and these figures are glibly repeated by the enemies of resection, but in so doing they never mention the later figures. Recently I heard a urologist read a paper in which he quoted Alcock as having 25 per cent mortality in his first fifty cases. He did not add that Alcock was learning things that he has passed on and that we who come after should profit by and that in his next 125 cases he lost only six patients. Most reported series now show from 4 to 1 per cent mortality. In my small series of about fifty cases I have had but one death and that was not due to resection but was due

to an eroding carcinoma of the bladder which I overlooked because of a large prostate which bled profusely. The carcinoma was discovered at suprapubic operation which was done to arrest bleeding which I could not locate cystoscopically and which I thought was due to the resection but which proved to be coming from the carcinoma. The patient did not die in the hospital but died several weeks after returning home. This case should not be rated as a mortality of resection but I mention it because it is my one big mistake in resection work.

*Conclusion:* Transurethral resection is a safe procedure in competent hands applicable in the great majority of prostatic cases.

From an economical standpoint it saves the patient hospital expense by a shorter period of hospitalization and returns him to his work at an earlier date.

From the standpoint of the patient it does not carry the dread nor the suffering and discomfort of prostatectomy and due to the fact that patients will submit to it more readily we will undoubtedly see less of the more severe cases of prostatic obstruction.

The procedure is not simple but technically difficult, requires careful preoperative and postoperative treatment and should only be attempted by a trained operative cystoscopist and never by the general surgeon.

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## TERMINAL ILEITIS\*

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The subject which I wish to discuss is one which is just now being brought to the attention of the clinician, after it has lain dormant for many years. I have reference to disease of the small bowel. We have been inclined to feel that this vital portion of the intestinal tract has been relatively free from disease. Many discrepancies have existed in the methods of analysis of its enzymatic secretions, value of findings, and substitution therapy. The tests are intricate, time-consuming, and give variable results. The usual routine of a gastro-intestinal x-ray is not sufficient to show the loops and coils of the small intestine and many important lesions are overlooked. Such a small amount of the exact scientific work has been done and so little has been offered to the clinician that he rarely thinks of the small bowel in the diagnosis of a complex abdominal complaint.

It is through the courtesy of Dr. Burrill B. Crohn, who described terminal ileitis as a clinical and pathological entity, that I became interested and was able to collect data made upon a study of seven cases. A review of the literature on the subject shows that very little has been

written. Some observations were made in 1923 by Moschowitz and Wilensky, who reported a few cases of a non-specific granulomata of the intestine. They did not, however, attempt to separate any distinct types. Crohn, Ginsberg, and Oppenheimer, in the Journal of the American Medical Association, October 15, 1932, published a complete report of fifteen cases of a non-specific ulcerative process of the terminal ileum. Clute of the Lahey Clinic in the Surgical Clinics of North America, 1933, reported a few cases. E. W. Rocky in the Northwest Medical, 1933, reported four cases occurring in children. Harris, Bell, and Brunn Harold, November, 1933, published a paper on "Chronic Cicatrizing Enteritis; A New Surgical Entity." This was followed by an article by John Honans and G. M. Hass in the New England Journal, December 28, 1933, on "Regional Ileitis; A Clinical, Not a Pathological Entity." Brown of the Mayo Clinic at the American Gastro-Enterological meeting, 1934, read a paper on eighteen cases of ulcerative bowel lesions in which he included a few cases involving the terminal ileum. From the above one would feel that the disease is rare; however, I am sure as we become better acquainted

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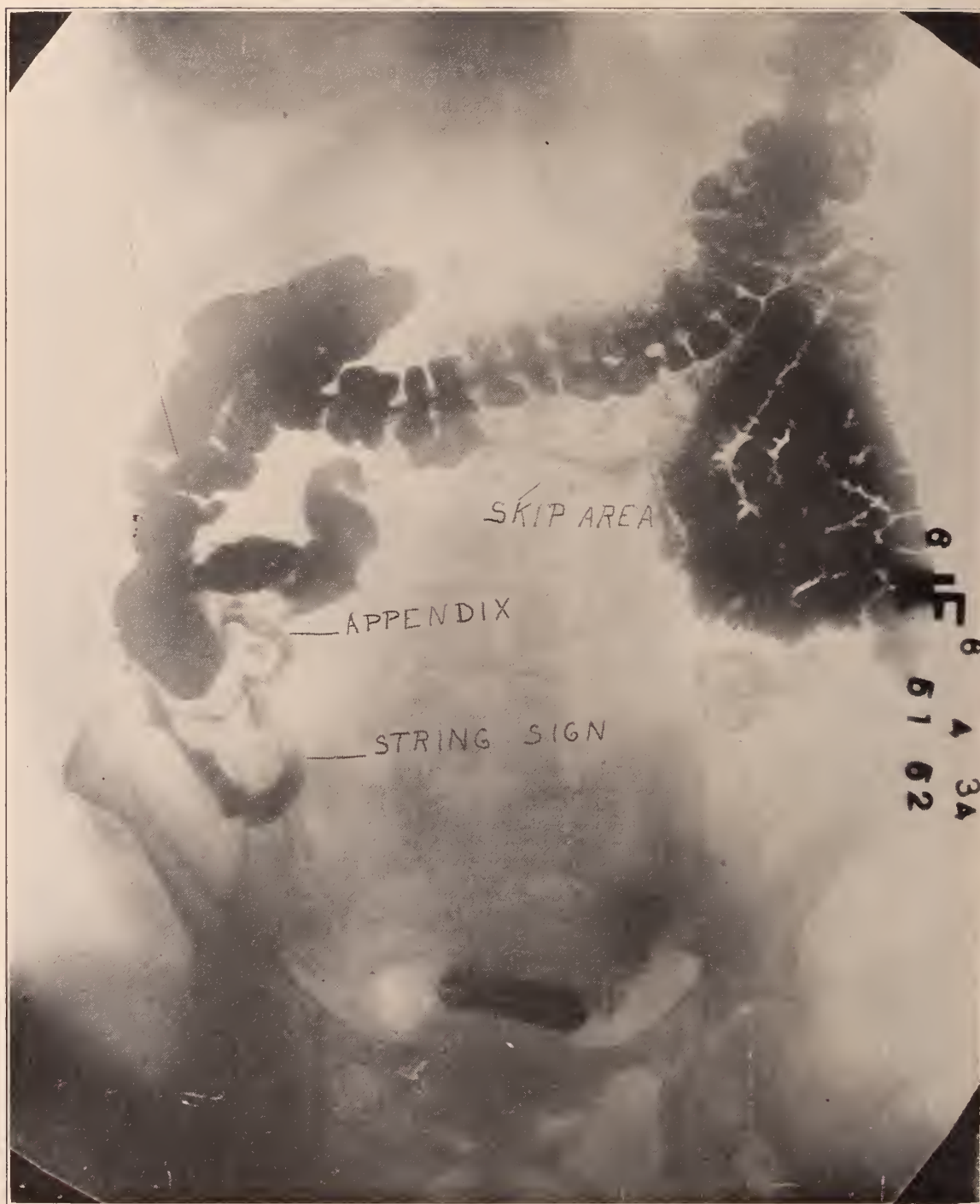


Fig. 1. Terminal Ileitis. Film six hours after opaque meal. Observe normal contour of cecum, proximal dilated loops of small intestine, the narrow and rigid distal loop of ileum.

with its diagnosis that the literature will be flooded with reports.

Terminal or regional ileitis is an inflammatory, ulcerative, hyperplastic and cicatricial diseased process, involving the distal end of the small bowel, running up to and including the ileo-cecal valve. It is characterized clinically by lower abdominal pain, diarrhea, and fever running a chronic course of from one to twenty years, with signs of progressing intestinal obstruction.

Thus far, most of the cases reported are in early adult life. Males are affected over females in the proportion of two to one. The exact cause is unknown. The theories which have been put forth are the same as those in colitis, namely, bacterial infection, food allergies and nutritional disorders.

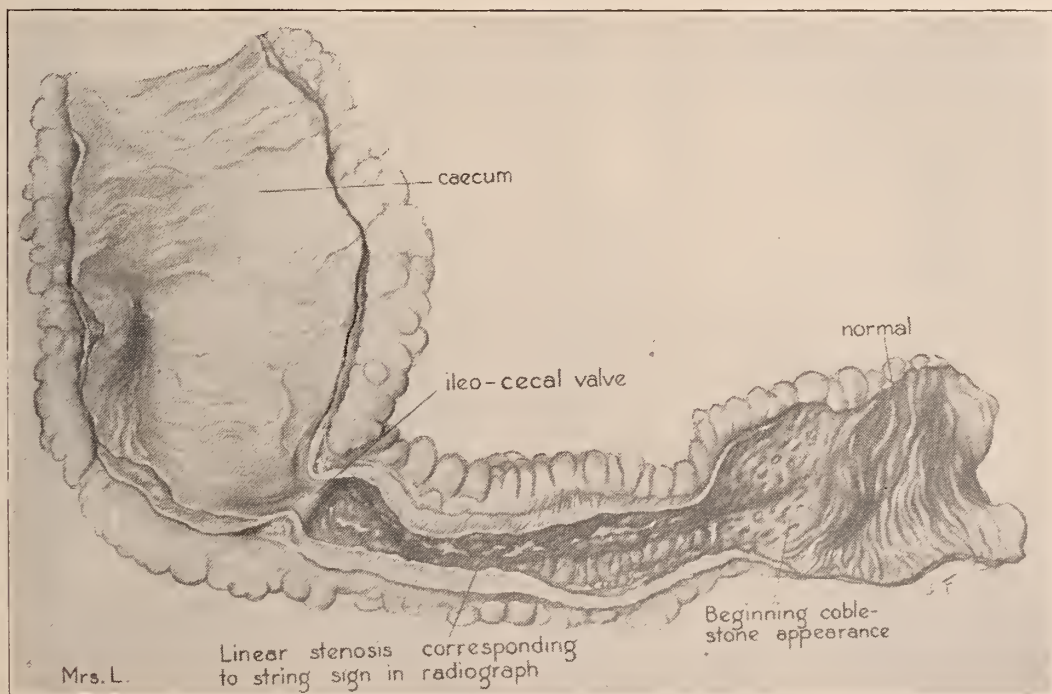
The subjective symptoms are as follows:

1. Diarrhea.
2. Lower abdominal pain.
3. Vomiting.
4. Fever.
5. Nervous phenomena.
6. Loss of weight.

The diarrhea is usually not severe, the patient giving a history of perhaps three to five bowel movements a day. There may be intervals of months duration in which

only normal bowel movements are noted. Constipation may alternate with diarrhea. Blood in the stool is nearly always present at some time during the chronic course. If there is an extensive ulceration of the bowel, a pancreatic-like stool may result. This is a large bulky stool which upon examination shows an increase in the amount of undigested fat. Grossly, the stool appears as though oil had been poured into the residue. Large fat droplets are seen to rise along the sides of the jar. Only when a great deal of the absorptive surface of the bowel is destroyed do we get this type of stool. Sometimes the gross examination will not disclose the fat. Then in suspicious cases, a chemical quantitative test must be run on the stool to determine the percentage of fat. In usual cases a simple mucous type of diarrhea is encountered, sometimes the number running quite high. Rarely is tenesmus seen and one does not get the urgency and gripping at stool as is seen in colitis and rectal disturbances.

The abdominal pain may be described as dull aching, cramplike, gripping, colicky, situated in the lower abdomen and usually the lower right quadrant. Rarely does it require a strong opiate to relieve it. The patient has found nothing which will relieve him. The intake of food causes more pain. Forcing the bowels to move by ene-





mas relieves only for a short time in a few cases. Nearly all of the patients are relieved of the acute fulminating attack by rest in bed.

Vomiting at times is the most annoying symptom, but usually it is intermittent and not that of an impending obstruction.

The fever is of intermittent type, there being days or months in which the patient is entirely free. During the acute attack the fever is of low grade, septic in type rising to 100 to 101. Not infrequently, however, it may run a more severe course as high as 103 to 104.

All of the patients are highly nervous and complain of inability to sleep, general bodily aches, hyperaesthesias, paraesthesias, chilly sensations, hot flashes, etc. Most of them do not appear very ill and are sent to the psychopathic wards with a diagnosis of neurasthenia.

Loss of weight varies considerably, some maintaining a fairly constant level, but the majority have lost ten pounds or better.

The localizing signs are very disappointing. Sometimes, a mass can be made out in the right lower quadrant. If present, it may be very obscure, and one is not always sure that he is not palpating the edge of the rectus muscle. Similarly, tenderness may be slight. If present, it may be found at McBurney's point or around the umbilicus. In addition to tenderness, a slight rigidity may be found particularly in the right lower quadrant during the severe attacks. Some cases, however, may exhibit absolutely nothing; no rigidity, no mass, no tenderness, nothing that one may put his finger on. It is likely, however, that if one examines the patient closely that some cue may be obtained by the careful physical examination. During the fulminating attack one may find exactly the same localizing symptoms as are found in acute appendicitis, namely: rigidity, McBurney's point tenderness, fever, vomiting, constipation, Rousing, Bastedo and Meltzer's signs. One may find the same head zones involved; that is, an increase in the sensitivity of the skin. The surgeon who opens up such an abdomen with this typical picture of appendicitis and finds only a slightly reddened peri-appendicitis should investigate immediately the terminal ileum. If cicatrization and thickening of the wall of the intestine has progressed to a degree of almost complete obstruction, one will find the loops of the bowel dilated

with gas and the abdomen tympanitic. Usually some vomiting occurs, but the progress of the obstruction has been so slow that the typical vomiting of impending obstruction is not present.

In late cases one is apt to see fistula formation to surrounding viscera and abdominal wall. Fistulae, either to the abdominal wall or to other viscera, should at once arouse the clinician to work cautiously and demand accurate x-rays of the ileum. The gynecologist and obstetrician are brought into the field, when they observe vaginal fistulae. The urologist, who through the cystoscope observes an unexplained reddened area or a definite fistulous tract, must at once be alert to the fact that the terminal ileum may be the underlying cause of the fistula.

Any appendectomy scar, with a retention of the original pain, should receive our consideration, for 50 per cent of the reported cases have had an appendectomy.

Laboratory findings are fairly constant, with occult blood in the stool, secondary anemia and leukocytosis. The x-ray study is a pathognomonic feature and it is only through this means that we are able to definitely and accurately diagnose this lesion. As first seen by Dr. Goldfarb, the barium filled ileum appeared as a narrow cord with a delay of the progress of the barium through the narrow lumen and a dilation of the proximal segment of small intestine. The narrowing as displayed on x-ray was later described by Dr. John Kantor as the "string sign". Many times one may not see such typical narrowing in the early cases but only filling defects due to small polypoid islands. Later, when complete obstruction has occurred and the bowel is dilated with gas, one sees on x-ray the typical step-ladder appearance of a complete obstruction of the small bowel. At this time it is impossible to say definitely the cause of the obstruction.

Terminal ileitis must be differentiated first, from mucous colitis; second, from ulcerative colitis; third, acute and chronic appendicitis; fourth, from tuberculosis of the bowel; fifth, from a hodge podge of diseases of the ileocecal region, such as cancer, Hodgkin's disease, actinomycosis, etc. If the lesion of ulcerative colitis is located low in the bowel, it is easily seen through the proctoscope, but if the lesion is in the transverse or ascending colon, then only by means of the x-ray are we able to differentiate it from terminal ileitis. Usually colitis has more tenesmus at

stool, more blood and pus in stool examination, and in many instances more bowel movements. Ulcerative colitis cases are usually more ill and have lost more weight than those of ileitis. Mucous colitis has more mucous, as a rule, even to the point of passing great casts which seem to conform to the shape and contour of the bowel. Slight blood may occur in mucous colitis and low grade fever. The x-ray examination is always necessary in every mucous colitis case to rule out terminal ileitis.

The fulminating attack of acute appendicitis cannot be differentiated from terminal ileitis only at operation. In chronic appendicitis, in those cases in which the barium fills the appendix, one may find that the appendix on fluoroscopy is bound down to surrounding structures, but never is the lumen of the terminal ileum narrowed as displayed on x-ray.

In tuberculosis of the ileocecal region there is an increased motility of barium as shown on x-ray, while in terminal ileitis there is a decreased motility together with the typical string sign. The Von Pirquet test may be negative in terminal ileitis, especially in younger individuals and guinea pig inoculation is always negative. In tuberculosis of the intestine, one nearly always finds evidence of tuberculosis in other parts of the body and a definite distortion of the cecal shadow, because the cecum as well as the ileum and the valve are involved.

Cancer in the ileocecal region is demonstrated on x-ray by the typical filling defects.

There is perhaps two other diseases which should be mentioned in the differential diagnosis: First, amebic dysentery. Amebic infection is demonstrated by the finding of the motile or encysted stage of the endamoeba histolytica in warm stool examination. Second, giardia flagellate diarrhea. These flagellates are demonstrated either on warm stool or duodenal fluid microscopical examination. The giardia never cause blood in the stool.

Upon examination of the resected specimen, the bowel has a hose-like feel, the wall is thickened and miliary abscesses may be found in the mesentery or among the adhesions and folds of peritoneum. Normal bowel may be found among areas of ulceration. The entire mass may be so bound down as to have the appearance of cancer. The wall of the bowel is thickened

and the lumen narrowed and irregularly distorted. The proximal segments are usually greatly dilated. The mesentery is thickened and fistulous tracts are found within its walls. The neighboring lymph glands are enlarged, soft and hyperplastic. These fistulous tracts may connect to the bladder, ascending colon, transverse colon, and even the descending colon. They may run to the tubes or empty into the small bowel. Some of the tracts may end blindly in a miliary abscess in the peritoneal cavity.

The microscopical picture is a varied one, in the predominance of polymorphonuclear, round cell and fibrous ingrowth. Giant cells may be demonstrated in the presence of foreign body vegetable cells. The pathological specimens have been mistaken for tuberculosis because of this foreign body giant cell found in the tissues, but the research work done in the Mt. Sinai Hospital, New York City, has failed to demonstrate the presence of tubercle bacilli on cut section or on guinea pig inoculation. Two of the cases studied were in young adults with negative tuberculin tests.

The treatment is chiefly surgical, which consists of a resection of the diseased ileum far beyond the areas of involvement, with an ileo-transverse colostomy. In several cases a distal resected ileum again became infected and it was necessary to do a second operation, resecting the distal ileum and transplanting it distally to the old ileo-transverse colostomy. Following operation, most cases do well. An operative mortality rate of 5 per cent is encountered. Two or three of the cases reported have developed a functional diarrhea due to the resection of too much of the absorptive surface of the bowel. Never was the diarrhea severe enough to incapacitate the patient, and as time goes on, normal bowel take over the absorptive function and accommodates for the loss of those vital resected portions.

In those cases in which several feet of bowel are involved in the ulcerative process, it may be necessary to treat the patient medically. This treatment is aimed at combating the anemia and the severe diarrhea, supplying the patient abundantly with all of the vitamins. If the patient's physical condition is satisfactory, anti-dysentery serum intravenously, Barger's diplo-streptococcic serum, may be tried, or an autogenous vaccine made from stool cultures may be given, first subcutaneous-



ly and then intravenously. Iron in some form is best given intravenously. A non-residue nourishing diet is essential.

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Discussed by Dr. Eley, N. Price; Dr. Heatley, John E.; Dr. Paulus, D. D., Oklahoma City, Okla.

## VOLVULUS: TORSION OF THE WHOLE MESENTERY

H. M. McCLURE, M.D.

CHICKASHA

Torsion of the entire small intestine upon its own axis is regarded as one of the causes of intestinal obstruction. I believe that many cases are mis-diagnosed because of the fact that the grouping of symptoms is unusual, the exact diagnosis always difficult, and the pathology often overlooked. A review of the literature shows that only thirty-seven cases which involved the entire small intestine have been reported. Because of this great rarity it seems desirable to place on record a case of intestinal obstruction, caused by a twisting of the entire small intestine upon its mesentery, associated with multiple diverticulosis of the ileum.

**Case Report:** S. W., male, aged 58 years, entered the hospital with the following history: Three days prior to admission he ate a hearty dinner, and some two hours afterwards he had an attack of severe gastric and intestinal pain, accompanied by vomiting which relieved him. That same evening his bowels moved, and thinking he had some form of indigestion he took a cathartic before he retired for the night. During the middle of the night the pain returned and again vomiting brought relief; this vomitus was bile stained but did not contain blood or feces. The next day he took some castor oil which was not retained; then an enema was given with no results. By now the pain was constant and seemed to center around the umbilicus. Anything given by mouth seemed to make the pain more severe, and produced vomiting. The routine of castor oil and enemas was continued but with no results, until the patient became so ill that it was thought necessary to send him to the hospital.

**Past History:** For the past few years he had had attacks of abdominal pain which were generally relieved by taking soda or by vomiting. These attacks have increased in frequency and severity. He formed the habit of taking cathartics two or three times each

week as he believed constipation produced these attacks.

**Physical Examination:** This male, about fifty-eight years of age, was acutely ill and vomiting. He complained of a severe pain over the whole abdomen. His face was pale and covered with perspiration. The abdomen was greatly distended, peristaltic waves were visible over entire abdomen. There was moderate tympanites and tenderness to pressure everywhere and the left lower quadrant seemed to be rather doughy, and there was shifting dullness on both sides. No mass was discovered on palpation of the abdomen or on rectal examination. The man was dehydrated and in shock. Temperature 97 degrees, pulse 100, and very weak; respiration 30. The onset, pain, and vomiting suggested an ileus. The persistent constipation suggested an obstruction, but there had been no fecal vomiting, and enough time had passed for this to appear. A diagnosis was made of intestinal obstruction, probably due to a low left-sided malignancy, and early operation advised.

**Operation:** When the abdomen was opened loops of small bowel which were purplish and greatly distended with fluid, issued from the incisional opening, accompanied by a large amount of reddish-tinged fluid. The incision was enlarged to one inch above the umbilicus which allowed more intestinal loops to escape, these being covered by warm compresses. Being convinced that the obstruction was low, the sigmoid and descending colon were examined; both were collapsed and empty. A careful search for the caecum failed, but proved that it was absent from the right side. After some time the caecum was found in the left hypochondrium; it was empty as was also about six inches of the terminal portion of the ileum. On trying to follow the small intestine it was found to be immobile and seemingly fixed to the posterior abdominal wall. On one of the exposed loops a diverticulum about the size of an orange was noticed; this was removed, as this was probably the pathology sought. But upon examining more of the distended loops numerous diverticuli were found, some fifty to sixty in number, ranging in size from an egg to a small marble. These were easily demonstrated as they were distended with fluid, and all being located

near the mesenteric attachment. Again trying to follow the ileum: it seemed to curve behind a peritoneal fold, so a complete evisceration was done and a visual examination was then possible. The mass of intestines were covered by warm compresses and pushed to the left side; a twisted mesentery, the twist being counter clock-wise, was now visible. With the mass of intestines held between the wide spread hands, a detorsion was possible by turning the entire mass clock-wise. After two complete turns were made the intestines and mesentery were restored to their normal position. Immediately peristalsis began, the passing of gas and feces thru the different loops produced loud gurgling noises, and the patient began to vomit large amounts of liquid feces; at the same time a large amount of this same material was escaping thru the rectum. A stomach tube was inserted into the stomach and a gallon of green fecal fluid was obtained. A rapid closure was done as it was apparent that the patient was being drowned in his own fecal fluid. Stimulants, oxygen, and artificial respiration were given but the patient expired in two hours.

*Literature:* In reviewing the literature I am unable to find any report of volvulus of the small intestine associated with multiple diverticulosis, therefore in reviewing and discussing the above case I will omit the diverticulosis, a subject which has in it enough material for an independent contribution.

The first cases of total or sub-total volvulus were found in the course of autopsies on subjects who apparently died from intestinal obstruction. In 1898 Delbert,<sup>1</sup> Routier,<sup>2</sup> Kirmisson,<sup>3</sup> and Reynier<sup>4</sup> of France published a list of cases and during that same year a case was described by Thornton.<sup>5</sup> In 1900 Bassinot<sup>6</sup> wrote a thesis on this subject, and in 1905 Lerda<sup>7</sup> and Costa<sup>8</sup> wrote the first Italian version of this condition. The first German literature appeared in 1898, by Helmsmüller,<sup>9</sup> and this was followed by Wilm<sup>10</sup> in 1903. In 1910 Hubner's<sup>11</sup> Memoirs with a large bibliography was the most complete work on volvulus. In the meantime, in 1903, Vaughan,<sup>12</sup> an American, gathered from the literature a collection of 60 cases, of which 20 were cases of volvulus of the entire small intestine, and 40 were cases of volvulus of parts of the ileum. In the first group there were 17 operations with 13 deaths, and in the second group there were 34 operations with 17 deaths. To these Vaughan added the record of his patient who was operated and recovered. Since Vaughan's collection appeared the following cases have been reported: Weible,<sup>13</sup> in 1914, reported a case which was operated and recovered. This was followed by Vaughan, who again, in 1917, reported a fatal case. Garrow in this same year reported a fatal case. In 1920 Wise<sup>14</sup> and Sabawala<sup>15</sup> reported a case each which recovered following operation. Billington<sup>16</sup>

that same year reported a fatal case, and this was followed by Tees, who, in 1922, reported two cases, both of which were operated and died. In 1924 Wheeler reported a case with recovery. This was followed by Lawson's<sup>17</sup> report of a fatal case in 1927. Lusena,<sup>18</sup> in 1928, reported a case that recovered, and in 1929 Guibal<sup>19</sup> reported four cases, in which the entire small intestine was involved; only one of this group died. This same year Valkanyi<sup>20</sup> reported a case which recovered.

The present case is the thirty-first case of volvulus of the entire small intestine to be operated, out of which fourteen have survived, showing excellent operative results which compare favorably with the mortality found in other forms of intestinal obstruction, which were not operated at once.

*Prevalence:* Surgeons are not agreed as to the rarity of volvulus; for example, Faltin, on the basis of statistics in Finland, says that volvulus of the small intestine causes one case in eleven of intestinal obstruction, while the writings of Spassokokuzi<sup>21</sup> reveal that among forty-seven cases of occlusion of the intestine there were eighteen cases of volvulus. These statistics show that in Eastern Europe not only is occlusion from volvulus frequent but that volvulus of the small intestine predominates. In Germany and Western Europe occlusion from volvulus of the large intestine is most frequent. The Italian statistics of Margarucci<sup>22</sup> shows 723 cases of intestinal obstruction of which twenty-one were cases of volvulus of the small intestine; that is, one in thirty-eight cases. In the Massachusetts General Hospital during twenty years there were tabulated 239 cases of intestinal obstruction, of which twenty-five were due to volvulus; this included ten cases of volvulus of the small intestine, one of which was a case of torsion of the entire mesentery.

*Etiology:* There are several congenital anomalies which may produce volvulus of the intestine. These are generally found in the new-born and nursing infant, but I fail to find any reported case of volvulus of the entire small intestine which occurred in the infant. According to Bosquette<sup>23</sup> most patients with volvulus have long mesenteries, permitting a greater range of motion of the mesentery and intestines during peristalsis. Congenital maldevelopment of the mesenteric pedicle in the shortening of its vertical attachment



to the posterior abdominal wall has frequently been present. Three of Guibal's cases supported his theory that a peritoneal band at the base of the mesenteric attachment will give rise to volvulus if the peristaltic waves are arrested by such a band. Tees contends that volvulus is often due to the disordered peristaltic action of the intestines. Another congenital condition, frequently seen, is a non-rotation of the common mesentery and large bowel, which usually occurs during the fourth fetal month. Another congenital cause, which was seen in my case, is Meckle's diverticulum, which represents the remains of the proximal part of the vitelline duct, the duct of communication between the yolk-sac and the primitive digestive tube in early fetal life.

Many acquired causes have been noted from time to time. Kanavel, Van Hook and Allbutt state that volvulus has been due to old scar formation and chronic mesenteritis; such was the case reported by Valkanyi. Other authorities contend that vegetable or bulky diet result in intestinal atony or chronic constipation, thus largely contributing to a twisting of the bowel. The numerous Russian writings reveal that the majority of cases of volvulus were much more frequent in times of economic distress. I do not know whether this is due to inanition, as would be indicated by the observations of Mirotwozn on the frequency of volvulus in dogs dead of hunger, or because of the indigestibility of poor food, as assumed by Vaughan and some of the Russian surgeons. This theory is well supported by Gibson who states that as a result of chronic constipation the intestine becomes distended, the mesentery lengthened and narrowed by traction. If now on some particular occasion the upper loop is distended by an accumulation of feces, a sudden jar of the body, a violent muscular effort, or a pressure upon the abdomen, may be sufficient to cause the upper loop to fall downward over the lower loop, the rotation is thus started; further distension of the twisted gut serves to render the twist more complete and incapable of spontaneous reduction. Strangulation of the bowel and mesentery follows.

This theory was also substantiated by my case in which the numerous diverticuli caused an induration and hypertrophy of the gut wall and mesentery. This increased weight of the ileum plus the muscular effort of vomiting caused the upper part of the small intestine to act as a pedicle and

start the twist. I believe that the numerous attacks of abdominal pain and vomiting of my patient were due to a diverticulosis.

*Age:* Volvulus is definitely associated with adult life, the average age being 45 years.

*Location:* More than one-half of the reported cases of volvulus are at the sigmoid flexure, fewer at the caecum, and fewest in the small intestine.

*Degree and Direction of Torsion:* The degree of torsion in most cases has been  $180^{\circ}$ ; in two patients it was only  $90^{\circ}$ , and in three it was  $720^{\circ}$ . Lawson<sup>24</sup> states that a rotation from  $270^{\circ}$  to  $320^{\circ}$  is usually necessary to produce an occlusion of the gut. Garrow's<sup>25</sup> patient had a twist three and one-half times or one of 1260 degrees. These differences in torsion, I believe, are due to the length and breadth of the mesentery, the height of its root, its obliquity, and the course of the vessels. In most cases the direction of the twist has been clock-wise, the ratio being about 12 to 1. The case I am reporting had a twist of  $720^{\circ}$  and was counter clock-wise.

*Symptoms:* As my experience is limited to one case I am forced to give the symptoms found by the notable authorities in conjunction with the symptoms found in my case.

Constipation is the usual and persistent symptom, associated with attacks of abdominal pain and vomiting. Fecal vomiting is seldom seen and must be considered a very diagnostic point especially if the patient is seen many hours after the onset. This is due to the fact that if the entire small intestine is involved it is unable to empty itself due to the occlusion usually located near the duodenum. Blood is seen in the vomitus if the occlusion has been sudden and severe.

The pain is variable as it depends upon the amount of mesenteric and intestinal twist; it may be sudden or severe and accompanied by shock. The picture can range from a calm, peaceful patient with slight abdominal discomfort to a patient in shock, collapse and dying.

The temperature is usually sub-normal; the pulse is seldom quickened until collapse threatens.

*Diagnosis:* I am convinced that it is impossible to make an accurate pre-operative diagnosis in these cases but one should suspect a volvulus when the picture is not

perfect for any other cause for intestinal obstruction. Even with the abdomen open, an accurate diagnosis may be difficult as borne out by the fact that four operators—Debrie, Kirmisson, Delbet and Delore—were unable to find the real cause for the obstruction until the case came to autopsy. This should convince us that in any given case of intestinal obstruction we should never close the abdomen until that obstruction is found, though it may require complete evisceration of the intestines.

The following seem to be salient facts upon which we can base our diagnosis in any given case of intestinal obstruction:

1. Persistent constipation.
2. Pain, most often centering in the umbilical region.
3. Obstruction and meteorism.
4. Persistent vomiting.
5. Slight change in temperature and pulse, until there are signs of impending death.
6. Roentgen examination is invaluable.

*Prognosis:* Without operative interference the mortality is 100 per cent; the mortality of the operated patients depends upon an early diagnosis. All of the reported successful operations have been on patients who were seen less than forty-eight hours after the onset. If the mesenteric vessels have become thrombosed the patient will probably die, regardless of what is done.

*Treatment:* The preoperative treatment is the same as is used for any other form of intestinal obstruction although I do not believe much time should be wasted trying to get the patient into good operative shape. Give salines and glucose, then operate immediately, as there is entirely too much pathology present to be overcome by the administration of the various prescribed preoperative treatments for intestinal obstruction. Early median incision, exploration of the mesenteric root, complete evisceration, and detorsion are the essential procedures. If the torsion is present do a complete evisceration, and with the mass of intestines held in the wide spread hands, detorsion is relatively easy. Never should there be any rough manipulation, either in making a diagnosis with the abdomen open or in correcting the torsion. If the nutrition of any of the loops has suffered, it may be necessary to do a resection. With regard to the treatment of the complex entanglements of several loops or of several segments no defi-

nite rules can be formulated. In cases with embryonic position of the colon, it may be necessary to fix it in the normal position; and if the condition appears to be chronic, it may be necessary to suture a portion of the mesentery to the anterior abdominal wall.

*Comment:* This was an unusual case from two standpoints: First, because of the multiple diverticuli, and second, because of the volvulus of the entire small intestine. To review the literature and select the cases has been a matter of great difficulty because the essential facts were given only by a few and their reports entirely too brief. These cases could easily be checked if they had a similar title. I am in accordance with Weible, who states that the phrase "torsion of the whole mesentery" should appear with every report.

#### SUMMARY

1. Torsion of the entire small intestine upon its own axis is unusual but has probably been overlooked many times.
2. The causation of these rotary entanglements is very obscure.
3. The mortality depends upon an early diagnosis.
4. Detorsion is usually easily accomplished.
5. Do not close any abdomen until the obstruction is found though it necessitates complete evisceration.
6. Practically it is necessary to take the condition as it is and to unravel the situation in the simplest way possible.

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## DISABILITIES OF HAND RESULTING FROM LOSS OF JOINT FUNCTION

Sumner L. Koch, Chicago (Journal A. M. A., Jan. 5, 1935), emphasizes the fact that disabilities of the hand due to loss of joint function are so common and so difficult of correction, once they have developed, that one cannot lay too great stress on their prevention following infection and injury by maintaining the immobilized hand in the position of function and by inaugurating active movement at the affected joints at the earliest possible moment. If the disability, once it has developed, is confined to a limitation of movement, improvement can be obtained frequently by the efficient use of splints and the application of well directed physical therapy. Manipulation under an anesthetic is helpful in a few and in well selected cases but, as often carried out, is quite as likely to increase the disability as to lessen it. If complete fixation has taken place, some form of active surgical treatment must be carried out. Shaw's operation, separation of the collateral ligaments from their proximal attachment, has proved of definite value in cases of fixation in extension at the metacarpophalangeal and interphalangeal joints. Silver's operation, subperiosteal separation of the volar portion of the joint capsule from its proximal attachment, has been of value in selected cases of fixation in flexion at the interphalangeal joints. If bony ankylosis has developed, arthroplasty comes into consideration. Although the results in his experience have been far from perfect, the author has secured definite improvement in a considerable group of cases and he believes that, with greater care in the operative procedure and more persistent efforts to secure active movement following operation still better results can be attained.

## SCARLET FEVER

Of 5,377 cases of scarlet fever studied, Pascal F. Lucchesi and James E. Bowman, Philadelphia (Journal A. M. A., October 6, 1934), administered scarlet fever antitoxin in 3,045 and not in 2,332. In a comparison of the serum with the nonserum treated cases, a slight decrease in the number of febrile days in the mild and moderate groups was noted, and a substantial reduction in the severe group. The incidence of complications was definitely less in the serum treated cases in comparison with those not so treated. This effect was most prominent in the severe group. Serum reactions occurred in 36.3 per cent of the patients treated with antitoxin. The use of ephedrine compounds had a slight effect on the prevention of serum disease.

## REGIONAL (TERMINAL) ILEITIS: ITS ROENTGEN DIAGNOSIS

John L. Kantor, New York (Journal A. M. A., Dec. 29, 1934), points out that in obscure cases of apparent colitis a roentgen study of the small intestine may reveal the presence of a terminal (regional) ileitis. The roentgen study of the small intestine is based on the careful observation of a progress meal from the time the cecum begins to fill to the time the ileum should normally be empty. The chief roentgen signs in regional ileitis affects the colon and the terminal ileum. The changes in the colon, however, are likely to be reflex in nature. The chief changes in the ileum are: Filling defect just proximal to the cecum, abnormality in contour of the last filled loop of ileum, dilation of ileac loops just proximal to the lesion and a "string sign" representing the actual lesion. The "string sign," though characteristic, is not pathognomonic of ileitis. It may be present in other stenosing processes in this region. When present, however, the diagnosis of terminal ileitis must be given consideration.

## CRITERIA OF CURE OF GONORRHEA IN THE MALE

Ambrose J. King, London, England (Journal A. M. A., Jan. 19, 1935), points out that no investigation as to cure need be undertaken in the gonorrheal patient who has a persistent urethral discharge or whose urine shows evidence of infection. To this main principle exceptions are rare. Palpation of the prostate is seldom of much assistance in the treated case. Palpation of the seminal vesicles is likely to give some positive information, but this is of little value when vesiculitis has been recognized and treated. The macroscopic examination of the vesicular fluid and the microscopic examination of the vesicular and prostatic fluids are of great importance. Unsatisfactory microscopic tests are strong evidence against cure. Vesiculoprostic culture by Price's method constitutes an important advance in accurate diagnosis. The test repeated at monthly intervals over a period of time constitutes the absolute criterion of cure when all other tests have proved satisfactory. Recent improvements in the complement fixation test for gonorrhea have increased in sensitivity and enhanced its value in testing for cure. A positive serum result in a patient who has not received injections of gonococcus vaccine within the preceding six weeks is reliable evidence against cure. Negative blood serum results on successive occasions in the course of treatment are evidence of efficient treatment but not necessarily of cure. A provocative diet, including alcohol, is sometimes of value as a preliminary to the final series of tests and should be employed.

# THE JOURNAL

OF THE

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Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

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### EDITORIAL

#### THE MEDICAL SCHOOL

It seems a shame that the Medical School of our University has to be made a target by politicians. Why is it that a so well conducted institution of higher learning cannot be managed by its Dean, the President of the University and Board of Regents? This is a perfectly legal procedure and satisfactory to everyone unless he may have some political axe to grind. The people of Oklahoma in general, and the medical profession in particular, have watched with pride the development of our Medical School from a Class C insti-

tution to Class A, recognized throughout the nation as presenting a teaching curriculum of high standards and graduating into the medical profession men and women well fitted to practice the healing art. We have been particularly fortunate in having the services of such men as Drs. LeRoy Long and L. J. Moorman to head this school, and while they may not be educated to cope with the politician when he attempts to create false impressions as to the conduct of the institution, they have both worked faithfully and efficiently in the development of a fine medical school and should not be interfered with by politicians but left as they should be, responsible to the President of the University and the Board of Regents.

There are now about seven hundred and fifty graduates of the Medical School distributed all over the world; there are two hundred and ninety-eight located in fifty-two counties in Oklahoma. In the freshman class this year there are sixty members selected from over six hundred applicants and these students come from thirty-three counties. The ones selected are all thoroughly prepared to take up the study of medicine. Besides our own graduates, we have many who have taken internship, many young ladies now under training for the nursing profession and several hundred who are graduates from the nurses' training school connected with the Medical School and University Hospital. These graduates from the Medical School, training school for nurses and interns are displaying with pride their diploma or certificate of service in the hospital.

If the politicians will keep their hands off and leave the conduct of these institutions to trained educators this high standard will be retained. Conversely, if the medical department is booted about by investigating committees composed of men not trained in medical education, it will become a political institution, lose its classification and the former students can only blush when reference is made to their alma mater.

May the people of the state see to it that political manipulation does not destroy the fine work and cooperative spirit existing in the faculty and keep the administration of our Medical Department in the hands of those trained to manage such an institution.





DOCTOR CHARLES M. PEARCE  
Oklahoma State Health Commissioner

Organized medicine in Oklahoma for the first time since statehood is delighted to have a State Health Commissioner selected by the Governor from a list submitted by the Council on his request. This new member of the Governor's cabinet is a man of experience in public health work and will be able to procure assistance from the U. S. Public Health Department and various foundations interested in this sort of work.

We wish to extend to Governor Marland our sincere thanks for giving the medical profession of the state this opportunity to assist in the selection of this officer and we appreciate this friendly gesture toward our profession.

That Dr. Pearce will fulfill our expectations in his new capacity we have no doubt and can assure him of our fullest cooperation.

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WELCOME TO NEW COMMISSIONER  
OF HEALTH FROM RETIRING  
COMMISSIONER

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The Governor has made a very wise choice in selecting the state health commissioner for the coming four years.

Dr. Charles M. Pearce is one of the outstanding health officers in the state. He is competent, eminently qualified and a

gentleman of the highest type and integrity.

I sincerely hope that the medical profession will wholeheartedly give him the loyalty and support that they have given to the retiring commissioner during his administration.

With best wishes to the Commissioner of the State Health Department, and sincere thanks for the loyalty and splendid cooperation of the medical profession, I am,

Faternally yours,

G. N. BILBY, M.D.,  
Alva, Oklahoma.

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A TIMELY MOVE

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It is a very significant fact that the Trustees of the American Medical Association deemed it necessary to call a special meeting of the House of Delegates to consider legislation proposed in the program for social security which is being formulated now in Congress in the Wagner Social Insurance Bill. Some phases of this measure should certainly be directed by the physicians of the nation through the only organization which can speak for them—The American Medical Association. Particularly must we interest ourselves in the plan for compulsory health insurance. We must with great force protest this feature and let our members of Congress know that the medical profession in Oklahoma is prepared to give the best of service to the patient in the low wage scale and make a charge well within his ability to pay. Now don't confuse this class with the unemployed; the class referred to in the bill is the employed whose average monthly income is less than \$250.00, and not those enrolled for Federal relief, either as employable or unemployable.

The dangers and reasons for opposition are well set out in the report of the Reference Committee of the House of Delegates, which was unanimously adopted, and which we are publishing for your information.

This is well worth your attention and after you have given it consideration communicate with your Congressman and Senators advising them that the physicians of Oklahoma protest the portion of this bill relating to compulsory health insurance and are in a position to meet the medical and surgical requirements of all patients within the class covered by this proposed measure.

## REPORT OF DELEGATES TO A. M. A.

Tulsa, Okla., Feb. 18, 1935.

Dr. L. S. Willour,  
Secretary-Treasurer,  
Oklahoma State Medical Ass'n,  
McAlester, Oklahoma.

Dear Doctor:

Your delegates have just returned from the called meeting of the A. M. A. in Chicago. As you requested a report in time to get into our Journal this week, we think that the full report of the Reference Committee covers everything very explicitly, so we are attaching it and request that you publish same in full, so that all the members of our organization will have an opportunity to familiarize themselves with same.

W. ALBERT COOK,  
MCLAIN ROGERS,  
HORACE REED.

Report of the Reference Committee Special Session  
House of Delegates, A. M. A., February 15  
and 16, 1935.

Your reference committee, believing that regimentation of the medical profession and lay control of medical practice will be fatal to medical progress and inevitably lower the quality of medical service now available to the American people, condemn unreservedly all propaganda, legislation or political manipulation leading to these ends.

Your reference committee has given careful consideration to the record of the Board of Trustees of the previous actions of this House of Delegates concerning sickness insurance and organized medical care and to the account of the measures taken by the Board of Trustees and the officials of the Association to present this point of view to the government and to the people.

The American Medical Association, embracing in its membership some 100,000 of the physicians of the United States, is by far the largest medical organization in this country. The House of Delegates would point out that the American Medical Association is the only medical organization open to all reputable physicians and established on truly democratic principles, and that this House of Delegates, as constituted, is the only body truly representative of the medical profession.

The House of Delegates commends the Board of Trustees and the officers of the Association for their efforts in presenting correctly, maintaining and promoting the policies and principles, heretofore established by this body.

The primary considerations of the physicians constituting the American Medical Association are the welfare of the people, the preservation of their health and their care in sickness, the advancement of medical science, the improvement of medical care, and the provision of adequate medical service to all the people. These physicians are the only body in the United States qualified by experience and training to guide and suitably control plans for the provision of medical care. The fact that the quality of medical service to the people of the United States today is

better than that of any other country in the world is evidence of the extent to which the American medical profession has fulfilled its obligations.

The House of Delegates of the American Medical Association reaffirms its opposition to all forms of compulsory sickness insurance whether administered by the Federal government, the governments of the individual states or by any individual industry, community or similar body. It reaffirms, also, its encouragement to local medical organizations to establish plans for the present economic conditions, by voluntary budgeting to meet the costs of illness.

The medical profession has given of its utmost to the American people, not only in this but in every previous emergency. It has never required compulsion but has always volunteered its services in anticipation of their need.

The Committee on Economic Security, appointed by the President of the United States, presented in a preliminary report to Congress on January 17 eleven principles which that committee considered fundamental to a proposed plan of compulsory health insurance. The House of Delegates is glad to recognize that some of the fundamental considerations for an adequate, reliable and safe medical service established by the medical profession through years of experience in medical practice are found by the committee to be essential to its own plans.

However, so many inconsistencies and incompatibilities are apparent in the report of the President's Committee on Economic Security thus far presented that many more facts and details are necessary for a proper consideration.

The House of Delegates recognizes the necessity under conditions of emergency for Federal aid in meeting basic needs of the indigent; it deprecates, however, any provision whereby Federal subsidies for medical services are administered and controlled by a lay bureau. While the desirability of adequate medical service for crippled children and for the preservation of child and maternal health is beyond question, the House of Delegates deplores and protests those sections of the Wagner Bill which place in the Children's Bureau of the Department of Labor the responsibility for the administration of funds for these purposes.

The House of Delegates condemns as pernicious that section of the Wagner Bill which creates a social insurance board without specification of the character of its personnel to administer functions essentially medical in character and demanding technical knowledge not available to those without medical training.

The so-called Epstein Bill, proposed by the American Association for Societv Security now being promoted with propaganda in the individual states, is a vicious, deceptive, dangerous and demoralizing measure. An analysis of this proposed law has been published by the American Medical Association. It introduces such hazardous principles as multiple taxation, inordinate costs, extravagant administration and an inevitable trend toward social and financial bankruptcy.

The committee has studied this matter from a broad standpoint, considering many plans submitted by the Bureau of Medical Economics as well as those conveyed in resolutions from the floor of the House of Delegates. It reiterates the fact that there is no model plan which is a cure-all for the social ills any more than there is a panacea for the physical ills that affect mankind. There are now more than 150 plans for medical service undergoing study and trial in various communities in the United States. Your



Bureau of Medical Economics has studied these plans and is now ready and willing to advise medical societies in the creation and operation of such plans. The plans developed by the Bureau of Medical Economics will serve the people of the community in the prevention of disease, the maintenance of health and with curative care in illness. They must at the same time meet apparent economic factors and protect the public welfare by safeguarding to the medical profession the functions of control of medical standards and the continued advancement which is vital to the highest type of medical service.

In the establishment of all such plans, county medical societies must be guided by the ten fundamental principles adopted by this House of Delegates at the annual session in June, 1934. The House of Delegates would again emphasize particularly the necessity for separate provision for hospital facilities and the physician's services. Payment for medical service, whether by prepayment plans, installment purchase or so-called voluntary hospital insurance plans, must hold, as absolutely distinct, remuneration for hospital care on the one hand and the individual, personal, scientific ministrations of the physician on the other.

Your Reference Committee suggests that the Board of Trustees request the Bureau of Medical Economics to study further the plans now existing and such as may develop, with special reference to the way in which they meet the needs of their communities, to the costs of operation, to the quality of service rendered, the effects of such service on the medical profession, the applicability to rural, village, urban and industrial population, and to develop for presentation at the meeting of the American Medical Association in June model skeleton plans adapted to the needs of populations of various types.

DR. HARRY H. WILSON,

Chairman.

P. S.: This report was unanimously adopted.

## MODERN WEAPONS AID PHYSICIANS IN FIGHT ON TUBERCULOSIS

The treatment of tuberculosis must in all cases be based on diagnosis. Only a doctor can decide whether treatment is necessary and how it should be carried out.

This is the underlying principle and aim for the 1935 educational campaign of the National Tuberculosis Association and its affiliated state and local organizations, which is scheduled to begin April 1. The importance of early diagnosis will be urged in order that treatment can be started promptly and with more prospect of a cure, or at least of arresting the disease.

Our knowledge of treatment has made tremendous strides and it is timely to inform the public more fully. To prevent misconceptions facts should be presented on today's methods of treatment, such as collapse therapy, the importance of the sanatorium, and social rehabilitation of the tuberculous patient. This is the basis

of the slogan for the campaign, "Fight Tuberculosis With Modern Weapons."

An appreciation of scientific medicine is a major objective of health education and the modern treatment of tuberculosis inspires respect for scientific medicine. Fuller knowledge of the treatment of tuberculosis dispels much of the fear of the disease and prompts the person who may be worried about his health to go to his physician.

The poster being made available suggests that medical science is a moving, living enterprise in step with the times. Attractive leaflets explain concisely and authoritatively the main aspects of the treatment of tuberculosis:

General treatment, need and purpose of the sanatoria, collapse therapy, and economic and social rehabilitation.

Tuberculosis through the ages has been surrounded by many deep-rooted fallacies. Much has been done to dispel these notions in the last fifty years and the knowledge gained of the disease has brought tuberculosis out of darkness. It is proposed in this campaign to further enlighten the public and to urge the importance of obtaining scientific medical service.

Physicians can help to further this aim by cooperating with the tuberculosis societies and the other participating agencies and thus assure a wider acceptance of accurate and sound knowledge.

### Editorial Notes—Personal and General

DR. E. E. LAWSON, Medford, is reported improved after being injured in an automobile wreck.

DR. W. A. TOLLESON, Eufaula, is confined to the Oklahoma Baptist Hospital, Muskogee, with a broken leg.

"NEW DEAL," AIM.

Dr. L. S. Willour,  
Editor, State Journal,  
McAlester, Okla.

Dear Sir:

The State Insurance Fund is endeavoring to have a "New Deal" with the medical profession of the state. We are aware that in the past the relationship between this department and the medical profession has not been too cordial. It is our desire to use only physicians in good standing in your association. In order that no exceptions are made, I would like for you to furnish me with a list of your members in good standing. This organization cannot function satisfactorily without complete accord and a mutual understanding with your members. It is our sincere de-

sire to work in harmony with your body and any suggestion or criticism you have to offer will be personally appreciated.

If I may be of service to you or to any of the members of your association in the future, do not hesitate to call upon me. I remain,

Very truly yours,

STATE INSURANCE FUND,

By Eugene B. Mapel, Manager.

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### TO DR. TOLLESON

This poem written to Dr. Tolleson, who is confined in the Oklahoma Baptist Hospital with a broken leg. In explanation of last stanza will say that the author is Mr. Primrose.

"You hōppy 'bout same like goat  
Run to office without any coat,  
Just to paint some damn guy's throat—  
Now you get em good rest.

Why you slide em down that hill,  
Don't you know it make you ill?  
Now you take em other man's pill—  
But you get em good rest.

Everybody say—too bad, too bad,  
Fine old Doc—he purty good lad,  
Wish his broke leg—I had—  
But he get em good rest.

Wish I could see my good ole Doc,  
But my damn Ford he stop like clock,  
Whenever he puff—she begin to knock—  
But you get em good rest.

Hurry up Doc and get em well,  
My boy sick, she cough like hell.  
Soon him have something more to tell—  
But you get em good rest.

You don't know who write this word,  
But his name you've often heard,  
Same like flower—this old bird—  
But you get em good rest."

Eufaula, Okla.

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### *News of the County Medical Societies*

MUSKOGEE Academy of Medicine met February 26-27 at Muskogee, with clinics held at the Oklahoma Baptist Hospital, scientific sessions at the Hotel Severs, and a general meeting open to the public at the Masonic Auditorium. The meeting was well attended, the registration reaching one hundred twenty for the two days. The following were guest speakers:

Dr. W. T. Pride, Chief, Department of Gynecology and Obstetrics, University of Tennessee, School of Medicine, Memphis, Tennessee.

Dr. LeRoy Long, Past Dean, University of Oklahoma School of Medicine, President Oklahoma State Medical Association, Oklahoma City, Oklahoma.

Dr. Ernest Sachs, Clinical Professor, Neurological Surgery, Washington University, School of Medicine, Saint Louis, Mo.

Dr. John O. McReynolds, Dallas, Texas.

Dr. B. A. Rhinehart, Little Rock, Arkansas.

Dr. Ned R. Smith, Medical Director, Oakwood Sanitarium, Tulsa, Oklahoma.

Dr. Sidney J. Wolferman, Fort Smith, Arkansas.

Dr. Raymond L. Murdoch, Oklahoma City, Oklahoma.

Dr. Forrest P. Baker, Superintendent, Eastern Oklahoma Tuberculosis Sanitarium, Talihina, Oklahoma.

Dr. Arthur G. Schoch, Dallas, Texas.

KINGFISHER County Medical Society met in January and elected the following officers:

President—Dr. Frank Scott, Kingfisher.

Vice-President—Dr. B. D. Townsend, Hennessey.

Secretary-Treasurer—Dr. F. C. Lattimore, Kingfisher.

Dr. C. M. Pounders, Oklahoma City, spoke on "Diagnosis and Treatment of Disease of Childhood Prevalent in Oklahoma."

Dr. C. P. Bondurant, also of Oklahoma City, discussed the "Diagnosis and Treatment of the More Common Skin Affections of This Portion of the County," with lantern slides.

PAWNEE County Medical Society met in January and organized their county society. The following officers were elected:

President—Dr. R. L. Browning, Pawnee.

Vice-President—Dr. C. E. Baum, Jennings.

Secretary-Treasurer—Dr. E. W. LeHew, Pawnee.

GRADY County Medical Society met in Chickasha February 1 for their monthly dinner. Dr. LeRoy Long, President of the Oklahoma State Medical Association spoke on "Medical Ethics" and Dr. LeRoy D. Long gave an illustrated lantern lecture on "Types of Thyroid Disease."

PITTSBURG County Medical Society met February 15th for their monthly meeting, at the Hotel Aldridge, McAlester. Guest speakers for the evening were Drs. George Underwood and Frank Brown of Dallas. "Endocrine Deficiencies" and "Ameobic Dysentery" were the topics discussed by Drs. Underwood and Brown, respectively.

HUGHES County Medical Society met February 8th at the Keystone Hotel, Holdenville. After a seven o'clock dinner the following program was presented:

Invocation—Dr. S. H. Babcock, Pastor Memorial Methodist Church.

Annual Roll Call—Dr. W. G. Diggs, Secretary.

President's Address—Dr. W. L. Taylor.

The State Legislature and Medicine—Dr. L. S. Willour, Secretary-Editor.

The Public's Physician—Dr. Babcock.

Installation of Officers—Dr. L. S. Willour.

Adjournment.

LINCOLN County Medical Society met February 6th at Chandler. Dr. Phil McNeil of Oklahoma City was the guest speaker. His subject was "Pneumonia".

SOUTHERN Oklahoma Medical Association held



their twenty-sixth quarterly session at Ada, March 5, and the following program was presented:

"Our State Laws and Organized Medicine"—Dr. Horace Reed, Oklahoma City.

"Eclampsia"—Dr. J. M. Gordon, Ardmore. Discussion, Dr. H. C. Bailey, Sulphur.

"Cardiac Neurosis"—Dr. Geo. Carlisle, Dallas.

"Cardiac Neurosis as Seen by the Psychiatrist"—Dr. Schwenkenberg, Dallas.

"Management of the Ruptured Appendix"—Dr. W. T. Mayfield, Norman. Discussion, Dr. A. J. Weedn, Duncan.

"Review of Spinal Anesthesia"—Dr. D. L. Downey, Chickasha. Discussion, Dr. J. G. Breco, Ada.

"Female Sex Hormones"—Dr. J. B. Eskridge, Oklahoma City.

"Endocrines"—Dr. Henry H. Turner, Oklahoma City.

#### DOCTOR ELI LIDE DAWSON

Dr. E. L. Dawson, Chickasha, died at his home February 8, following a short illness. He was born at Camden, Arkansas, in 1856, receiving his medical education at Tulane University, and Jefferson Medical College. He has practiced in Chickasha since 1899, serving as city health officer for the past several years.

He is survived by his wife and three daughters.

Burial was in Rose Hill cemetery.

#### DOCTOR HARRY CLIFFORD ANTLE

Dr. H. C. Antle, Chickasha, died at his home February 7, after an illness of several months.

Dr. Antle was born in Madison, Indiana, November 24, 1881. He received his medical degree from the University Medical College of Kansas City in 1904. For the past twenty-one years he has practiced in Chickasha.

During the World war he served overseas and was discharged with the rank of major.

Funeral services were conducted in Chickasha with interment at Kansas City, Mo.

Dr. Antle is survived by his wife and one sister.

#### DOCTOR PERRY EDGAR MITCHELL

Dr. P. E. Mitchell, 55 years old, veteran physician of Hughes County, died at his home Saturday, February 16th, unexpectedly.

Dr. Mitchell was graduated from the Medical School of the University of Nashville in 1905, and in 1906 he came to Yeager where he began his practice. He later moved to Wetumka where he remained in active practice until two years ago when a stroke of apoplexy necessitated his retirement.

Burial was in Wetumka cemetery.

#### ITS QUICK ACTION PREVENTS DEFORMITIES

No antiricketic substance will straighten bones that have become misshapen as the result of rickets. But Mead's Viosterol (plain or in Halibut Liver Oil) can be depended upon to prevent ricketic deformities. This is not true of all antiricketic agents, many of which are so limited by tolerance or bulk that they cannot be given in quantities sufficient to arrest the ricketic process promptly, with the result that the bones are not adequately calcified to bear weight or muscle-pull and hence become deformed.

#### WHAT SHOULD AN ARTHRITIC PATIENT EAT?

Walter Bauer, Boston (Journal A. M. A., Jan. 5, 1935), points out that the first requisite in treating each patient with skeletal symptoms is to determine whether or not the symptoms are due to arthritis and, if so, to determine the type of arthritis. Not until this has been done should one attempt to prescribe a diet. There is no specific diet for patients with arthritis of known origin other than the dietary which would ordinarily be prescribed whenever the particular disease or etiologic agent responsible for the arthritis is dealt with. Gout is the one exception. Degenerative and rheumatoid arthritis represent the diseases one ordinarily thinks of as chronic arthritis. They are not casually related or due to the same etiologic agent. In degenerative arthritis, diet is indicated only in the presence of obesity, and then it should be sufficiently low in calories to allow weight reduction but adequate in every other respect. There is no evidence to prove that a low carbohydrate diet is indicated in rheumatoid arthritis, nor is there any proof that it is efficacious in curing the disease. Patients with rheumatoid arthritis should eat a diet high in calories (unless they are overweight), high in vitamins and adequate in respect to calcium, phosphorus and iron.

#### PAIN IN BENIGN ULCERS OF ESOPHAGUS, STOMACH AND SMALL INTESTINE

Andrew B. Rivers, Rochester, Minn. (Journal A. M. A., Jan. 19, 1935), states that the clean-up syndrome usually accepted as being diagnostic of peptic ulcer indicates an uncomplicated ulcer. When the pain of gastric ulcer shifts definitely to the left, slightly upward or to the back, when the pain of a duodenal ulcer is projected toward the right, upward over the region of the liver or through to the back, or when the pain of a gastrojejunal ulcer extends downward or through to the back, one can usually correctly assume deep penetration or partial perforation of such a lesion. The presence of two distinctly separated areas of pain, especially if such pain is projected into two widely separated areas, frequently is indicative of two peptic lesions, such as an associated duodenal ulcer and gastrojejunal ulcer or an associated gastric ulcer high on the lesser curvature and a perforating duodenal ulcer. The situation of the pain of an obstructing ulcer, regardless of the situation of the lesion, is usually diffusely spread out over the epigastrium. Uncomplicated peptic ulcer probably indicates its presence as a visceral phenomenon, which asserts itself over the splanchnic nerves. The projecting peptic ulcers are in all probability the result of direct stimulation of the somatic nerves with a relay of these impulses as pain into the peripheral or cutaneous branches of such nerves. It is conceivable that the distortion of the approved ulcer syndrome in such instances is influenced by the accumulation of impulses of varying intensity over both the splanchnic plexuses of nerves and over the somatic nerves.

# ABSTRACTS « REVIEWS « COMMENTS AND CORRESPONDENCE

## EYE, EAR, NOSE and THROAT

Edited by Marvin D. Henley, M.D.  
911 Medical Arts Bldg., Tulsa

Pellagra As a Cause of Optic Neuritis. Joseph Levine, New York. Archives of Ophthalmology, December, 1934.

Sudden failing of vision in both eyes was the chief complaint of this patient, a middle-aged white woman in comfortable circumstances. Past history showed that distance vision was normal while glasses for reading had been in use only three years. Recently she had lost a little weight, had had a persistent diarrhoea for the past seven months and vomiting occurred during the past eight weeks. Her appetite was poor and she said she occasionally drank a cocktail or highball and smoked in moderation. External inspection of the eye proved to be negative. Visual acuity was reduced to counting fingers at one foot and nothing would improve this condition. Ophthalmoscopic examination showed a bilateral exudative optic neuritis. Perimetric examination disclosed the fact that form was slightly contracted, color for green entirely absent and a large central scotoma for red in both eyes. Three days later she consulted her family physician, Dr. Morris Dinnerstein, because of a very sore mouth. Upon examination it was found that she had a stomatitis. At this time he went into the case in a more thorough manner and discovered that she was a consistent drinker, and through her family he learned that for the past six months the patient had been despondent and was drinking more heavily and had practically stopped eating. Dr. Dinnerstein diagnosed "pellagra following alcoholism". Within the next twenty-four hours the typical dermatitis of pellagra appeared on both hands and both feet, with pain in both legs.

A diet, high in protein, was prescribed and vitamin B2 in the form of bemax was given. Such rapid improvement took place that within five days the stomatitis had disappeared and the diarrhoea in one week. In three days the optic neuritis began to quiet down and a gradual gain in vision was noted. No trace of the dermatitis was seen after four weeks. At this period there was no exudation and the blurring had ceased. The central scotoma for green and red diminished and in slightly less than three months none existed in the right eye and but a small paracentral scotoma was present in the left eye. By the middle of the fifth month her visual acuity was V.O.D. 15/15, V.O.S. 15/20. While the patient was undergoing treatment she was allowed a small amount of alcohol each day which did not interfere with her recovery, due to the increasing amount of her food.

Pellagra is considered a nutritional disease by the majority of medical men of today. The characteristics of pellagra are dermatitis, which is always bilateral and symmetrical, stomatitis, despondency, loss of appetite, severe diarrhoea, and nausea and vomiting, but these latter two conditions are uncommon. Although it is generally agreed that pellagra results from a deficiency in diet, authorities differ as to which of the vitamins, if increased, will effect a

cure. Deteriorating changes occur in the chemical constitution of the nervous system, sometimes implicating the spinal sympathetic ganglions. Atrophy and degeneration take place in the brain cells the same as elsewhere. The gastrointestinal tract is disturbed and frequently there is ulceration of the mouth. For the treatment of pellagra a list of preventive foods is given. In connection with the dietary precaution plenty of rest is necessary, sunlight is to be avoided, hygienization of the mouth must be watched and it is believed that intravenous injections of sodium thiosulphate are advantageous.

The prognosis of pellagra is poor, especially in patients over 50, with the mortality rate being higher in females. At least a year should pass in which there has been no pellagra symptoms, before a cure may be definitely established. Cases of pellagra in this country are not at all unusual, especially in the South. Frequency of ocular complications can only be determined by routine eye examination of all pellagrins. The lack of certain vitamins, previously discussed, apparently cause the various eye symptoms.

Aspergillosis of the Nose and Maxillary Antrum. A. Brown Kelly, Glasgow. The Journal of Laryngology and Otology, December, 1934.

The literature on this infection is very rare. The habitat of the aspergilli is in many of the moulds on foods, fruits, grains, seeds, plants, etc., in the state of decomposition. It is contracted by constant contact or appears in stagnating secretions of the ear or upper or lower respiratory tract. Frequently after the diagnosis is made it is impossible to trace the source of the infection. Two males and five females are reported by the essayist. The infection was limited to one side of the nose in all cases; it was present in the antrum in three cases and in the nose in four cases.

The symptoms are paroxysmal sneezing, profuse rhinorrhoea and swelling of the inferior turbinate. If the antrum is the site of the infection the patient may complain of neuralgia. If the fungus is in the nose the patient may complain of headache. At irregular intervals there is a discharge from the affected side of pieces of white membrane or lumps of tough green gelatin-like secretion. The membrane and pus usually come from the antrum, while the green masses form in the nose. The side of the nose not affected appears normal on examination. The other side is swollen, catarrhal and obstructed and cocaine and adrenalin shrink the tissues with difficulty. In three of the cases when this had been accomplished it was found that there was a green fungus mass in the distal half of the fossa. Polypoid growths were present. When these were removed there was quite an amount of green material found, about a teaspoonful in one instance. This could be picked out with forceps. Even when thoroughly cleaned out it many times continues to reappear. This may occur every few days. There is a possibility of a reinfection occurring in the nose to account for the persistent growth.

A thorough cleansing will many times effect a cure, but if the growth continues to appear then some an-



tiseptic solution must be used which is capable of killing the fungus. Various solutions and powders are used by different men. In one case which was unusually resistant to treatment the essayist cured with liq. hexylresorcinol in two applications. The essayist thinks the opening beneath the inferior turbinate is inadequate if the site of the infection is in the antrum. A Caldwell-Luc should be done and the sinus thoroughly cleaned out. He reports Tilley doing five cases in this manner without any history of recurrence. When the lungs are first infected with a resulting hemorrhage, the disease may be confused with tuberculosis. A case of this kind is cited where the patient contracted the aspergillosis while feeding canaries. Different writers have reported this fungus in the central nervous system (spinal cord, medulla and brain), lachrymal sac, cavernous sinus and in the eye by means of a corneal ulcer.

**A Simple Surgical Method of Dealing With Salivary Calculi in the Submaxillary Ducts.** Dr. August L. Beck, New Rochelle. The Laryngoscope, December, 1934.

This is a method for the easy removal of salivary calculi, for as the essayist aptly remarks, "the removal of a calculus from a salivary gland duct can either be a simple, easily accomplished procedure, or a most exasperatingly difficult, tedious and messy experience to both the patient and the physician."

He divides these lesions into that of the early stage with a partial obstruction and no cyst formation, and complete obstruction with subsequent cyst formation. The method described has to do with Wharton's duct but may also be used in calculi and cysts of the parotid gland. The occurrence of these is fairly common. According to Blair salivary calculi occur more frequently in the submaxillary duct than in all other ducts combined. Out of thirty-seven cases reported by Czygan, twenty-two were located in Wharton's duct. Sometimes the calculus alone or with the entire gland is removed through an external neck incision. The common symptoms complained of are discomfort or pain, and swelling, particularly when eating. Due to the presence of lime salts the pathology can usually be detected with a roentgenogram. If it is of considerable size it or they may be palpated. In addition the essayist uses a Bowman's lacrymal probe in the duct during the examination. There may be a cyst present without calculi, but in the process of removing the cyst, calculi should always be searched for, and if found, removed.

The instruments for this operation are those used commonly by the ophthalmologist, viz., eye needles and silk, the Bowman lacrymal probe, the Bowman canaliculus knife, conjunctival forceps, straight and curved eye scissors, strabismus hooks, etc. The essayist performs his operations under local anaesthesia with the patient sitting in a chair. An assistant, using gentle suction, greatly facilitates the procedure. Because of the fact that the floor of the mouth is made up of loose tissues it is hard to work here surgically unless these are securely anchored in some manner. He does this by means of silk traction sutures placed on each side of the wall of the duct and through its opening. Now if there is an assistant present he may keep these on a pull, or if there is not an assistant available they may be hooked over and around the teeth. In this way instead of having a small opening to search for there is a fairly large slit. The lacrymal probe is now passed and the calculus searched for and then the Bowman's canaliculus knife is inserted and the duct opened up to the lesion. Scissors may be used to complete the incision if necessary. When this has been accomplished it

should not be hard to remove the calculus. This is not always true however for sometimes instead of the stone tumbling out easily we find it attached on its irregular surface to the surrounding tissues. Then instead of effecting the delivery with a strabismus hook or similar instrument, the formation must be carefully cut out with scissors.

During the excision care must be taken not to injure the ranine artery, lingual vein and lingual nerve, located on the tongue side of the operative field. He does not suture unless there is fluid present in cyst formation and then he sutures the lining mucous membrane of the duct to the adjacent mucous membrane of the mouth floor to prevent a recurrence. Mosher and Lurie use a similar means of immobilization except they cut directly down on the calculus.

**Conservative Treatment of the Nose and the Accessory Sinuses.** W. E. Grove, M.D., Milwaukee. Annals of Otology, Rhinology and Laryngology, December, 1934.

Grove places the abnormal pathologic conditions of the nose into four groups: malformations of the structural framework of the nose, infections, allergic conditions and neoplasms. He does not enter into the discussion of the merits of conservative and radical surgery. The manuscript is confined to the conservative treatment of infections and allergic conditions.

Following are some of the conclusions reported by Lierle and Moore after experiments on dogs, guinea pigs and man: tap water and distilled water, when applied to the mucosa of the upper respiratory tract, causes a slowing of the ciliary beat; three per cent ephedrin hydrochlorid is not detrimental to ciliary activity but at times slightly increases it; five per cent cocaine hydrochlorid is not detrimental to ciliary activity, but 10 and 20 per cent solutions produce definite slowing with good recovery; mild silver protein solutions of 5, 10 and 20 per cent produce an initial speeding of ciliary activity with a subsequent slowing, probably due to the water solvent; menthol and thymol are definitely detrimental; a 1:1000 epinephrin hydrochlorid, a 2 per cent zinc sulphate and a 2 per cent mecurochrome solution, in the order named, are definitely detrimental to ciliary activity; one-half per cent silver nitrate solution is immediately and fatally detrimental to ciliary activity and in no instance was it again possible to start ciliary beating after its application.

The nose and accessory sinuses are protected from infection by the normal ciliary activity, the mucinous layer which overlies the ciliated epithelium, the action of the air currents, the phagocytic action of macrophages and microphages, the action of opsonins, lysins and agglutins and the reactions of natural immunity. Diet, physiologic effects, allergy and trauma tend to lessen the resistance of the nasal mucosa. The aim of the treatment is restoration of the normal physiological activity of the mucosa. This is accomplished by reducing the swollen mucosa, the removal of stagnant secretions and the stimulation of the mucosa to resume its normal activity. The shrinking is accomplished by the application of various kinds of drugs. The operator must use care at this point for instead of assisting the normal action of the mucosa he may inhibit it by the use of an injurious drug. The stagnant secretions may be removed from the sinuses with saline irrigations, preferably through the natural ostium, or if this is not possible, due to abnormal anatomy, then by means of a puncture. In the case of the antrum, drainage and aeration may be facilitated by means of a window in the

inferior meatus; fracture of the middle turbinate for the frontal sinus and removal of the anterior wall for the sphenoid, accomplishes the same end. In general when such measures as mentioned have failed to give the patient sufficient relief, then more radical measures must be inaugurated. The essayist uses various vaccines quite successfully. The rhinologist, internist and allergist must work in close harmony if the allergic patient is to be relieved. Mention is made of Feldman's iodine and calcium therapy.

### ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.  
717 North Robinson Street, Oklahoma City.

**Differential Diagnosis of Injuries of the Spine.** Howard P. Doub. *Radiology*, XXIII, 267, Sept. 1934. Compression fracture of the spine is very frequent

and comprises about 40 per cent of all spinal fractures. Individual vertebrae in various areas may be simultaneously involved. Differential diagnosis should take into account preexisting unsuspected lesions.

Roentgenographic examination of the spine is extremely important even in cases with histories of slight or uncertain injuries; and the evidence of fracture may be confined to minute breaks in the margin of the body. Angulation of the spine, either posteriorly or laterally, is very suggestive. The disc shows little or no narrowing, such as is present in tuberculosis. However, with rupture of the nucleus pulposus, narrowing of the intervertebral space may occur.

Cases in which healing has taken place also show narrowing or obliteration of the space, with bony union of the vertebrae. In the anteroposterior view there is often narrowing in the superior-inferior diameter, with widening in the lateral diameter, and an associated lateral angulation.

Repair is slow and lipping at the vertebral margins is usual after about three months—nature's attempt to immobilize the spine.

Fracture of the transverse processes is most frequent in the lumbar spine region; here this fracture must be differentiated from rudimentary rib which is characterized chiefly by its smooth, eburnated articular end.

Dislocation of the spine, unaccompanied by fracture, takes place almost always in the cervical area. It is usually unilateral, but, at times, occurs bilaterally and is much more serious.

Spondylolisthesis is common and, the author believes, is nearly always the result of a congenital anomaly of the spine.

Spinal bifida occulta is probably the most common anomaly of the spine and is most frequent in the lumbosacral area. Bohart, studying a large number of railroad workers with known spina bifida, found that men with this anomaly were not more liable to injury and disability than others not so affected. He found the same to be true in the cases of patients with sacralization of the fifth lumbar vertebra.

**Multiple Myeloma.** David E. Ehrlich. *Radiology*, XXIII, 418, October, 1934.

Multiple myeloma is a primary malignant tumor of the bone marrow, characterized by multiple foci, pain, spontaneous fractures, Bence-Jones albumosuria,

anaemia, and asthenia. It occurs chiefly in the ribs, spine, sternum and pelvis of adults. It is uncommon in occurrence, insidious in onset, difficult to diagnose, and the prognosis is hopeless.

**Pathology:** Grayish and reddish masses appear simultaneously in spongy bone or in the medullary canal and, as they slowly grow, excite active resorption of the bone. Subsequent bending and breaking of the bone take place, due to the loss of mineral salts. Gradual thinning and perforation allow pathological fractures to occur, although they are accompanied by little or no pain and are followed by soft tumor masses over the bone.

**Roentgenographic Appearance:** The lesions are seen to be punched-out, rarefied areas, widely scattered through the skeleton. The cortex is not destroyed, but expansion of the shaft may be noted.

**Diagnosis:** The presence of Bence-Jones albumosuria is a helpful diagnostic point, but it is not altogether pathognomonic of multiple myeloma. The prognosis is poor. The duration of life has varied from eight months to from eight to eleven years, with an average of less than two years. X-ray treatment in light doses relieves the pain markedly and may prolong life.

Detailed histories of seven cases are given.

### SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
LeRoy Long Clinic  
714 Medical Arts Bldg., Oklahoma City.

**Complications of Peptic Ulcer.** By Sara M. Jordan and Everett D. Kiefer. *American Medical Association Journal*, December 29, 1934.

The complications considered in this study were pyloric obstructions, hemorrhage and intolerance to alkali therapy.

Obstruction, hemorrhage and intolerance to alkalis are complications that influence prognosis in the medical management of duodenal ulcer.

Obstruction of all degrees in the group of 79 cases studied were relieved in 89% by medical management. It recurred later in 13%.

Obstruction, hemorrhage and intolerance to alkalis were all unfavorable factors in the medical management of the disease. Single hemorrhage had the least effect on prognosis. Obstruction was next in its unfavorable influence. Multiple hemorrhage and intolerance to alkalis had the most harmful effect on the later course of disease.

—LeRoy D. Long, M.D.

**The Value of Irradiation in the Treatment of Ovarian Carcinoma.** John H. Harris, M.D., and Franklin L. Payne, M.D., Philadelphia, Pa. *American Journal of Obstetrics and Gynecology*, January, 1935.

These authors quoted from the conclusions made by Drs. Keene, Pancoast and Pendergrass made in 1927 on the results obtained from irradiation therapy in 24 cases of inoperable carcinoma of the ovaries.

"1. It is impossible to predict what the effect of irradiation will be on any given patient. This effect will be determined by the first series of treatments; should no benefit be derived, further irradiation is usually a futile procedure.

"2. In case of more or less generalized carcinoma-



tosis, in which the primary growth has not been removed, little can be expected from treatment.

"3. A decidedly more hopeful outlook, so far as relief from symptoms is concerned, can be anticipated when the primary growth has been removed."

This article deals with 38 additional cases which confirm these conclusions except that the prognosis is more favorable for palliation and prolongation of life with the improvement of technic and equipment.

This analysis shows that the histologic type of carcinoma is of no value in determining what the effects of x-ray therapy will be. On the other hand, the extension of the growth proved to be of definite prognostic value. For this reason patients were divided into three groups, based upon the degree of involvement at the time of operation:

1. In the first group (6 patients) complete removal of the affected organ was possible and no visible evidence of malignancy remained. It is significant that these authors stress again the necessity of removing the uterus and the opposite ovary in the presence of unilateral ovarian carcinoma, despite the absence of macroscopic or even frozen section evidence of contra-lateral involvement.

2. The second group (19 patients) includes those from whom the primary growth was removed but peritoneal metastasis were present. The original growth should be removed when possible for even in the presence of transplants it greatly enhances the effect of postoperative irradiation. Frequently the operation alone will be followed by temporary symptomatic improvement, but more prolonged palliation occurs when x-ray therapy is preceded by surgical removal.

3. The third group (13 cases) includes those with generalized carcinomatosis in whom it is impossible to do more than exploratory operation and drainage of the ascites. It is the policy to advise abdominal operation under local anesthesia in such cases for this affords (a) the best means of removing the ascitic fluid and the collection of tissue for microscopic study; (b) the unexpected possibility of removal of the primary growth, thereby increasing the chance of a favorable response to irradiation; (c) and other pelvic tumors may so closely simulate extensive ovarian carcinoma that exploration is necessary for accurate diagnosis.

For comparison they have included 51 patients who were operated upon for ovarian carcinoma but were not given postoperative irradiation. They have used the length of life after operation as the most definite basis for comparing results obtained in treated and untreated cases.

Of the 38 patients who received x-ray therapy, 21 are dead at the time of report. All deaths occurred in groups 2 and 3. Of the patients not given x-ray therapy, 25 are dead.

In group 1, those cases given x-ray treatment all are living, while 15 per cent of the untreated cases died within two years, demonstrating the prophylactic value of x-ray therapy following apparent complete removal.

Of the 14 patients in group 2, 29 per cent are living, while in the untreated cases only 13 per cent.

In group 3, 25 per cent are living, in contrast to 11 per cent of the non-treated cases.

The most significant 5-year results lie in group 2 where 43 per cent of the patients treated are alive after five years, as against 13 per cent of those not treated. Demonstrating the improvement in equip-

ment and technic, the present series shows a 5-year salvage of 43 per cent, whereas in the report of Keene, Pancoast and Pendergrass no cases lived five years. In group 3 none of their patients lived more than one year, and in this series a third of the patients lived over two years, demonstrating the palliative influence of x-ray therapy.

A case is given to show the impossibility of predicting the effect of x-ray therapy upon a given patient, even though as a rule the extent of the growth is the best guide to prognosis.

Comment: This article is abstracted in some detail because though this is a small series reported it represents the experience of most groups. It also emphasizes the tremendous value of giving x-ray therapy in the patient where apparently all of the malignant tissue has been removed.

—Wendell Long.

**A Comparative Study of Lipiodol Injection and Air Insufflation in Sterility.** By Benjamin Rabbiner, Brooklyn, N. Y. *American Journal of Obstetrics and Gynecology*, January, 1935, Page 100.

These authors have reviewed their own experience and have quoted extensively from the literature about uterosalpingography. The remainder of this abstract is quoted from the author's article and includes the conclusion:

"In view of my personal results in a limited number of cases I believe that despite the simplicity and facility of uterosalpingography, trans-uterine air insufflation should be the method of choice for the determination of tubal patency in cases of sterility, and that uterosalpingography should be reserved for unusual special cases. With simple insufflation it is easy to determine not only whether the tubes are occluded or patent but also whether one or both tubes are open (stethoscope). In addition, the site of obstruction may be revealed by the localization of pain, and tubal spasm by the use of the kymograph.

Great selectivity and care should be exercised in sterility cases before the injection of lipiodol, and uterosalpingography should be the last step rather than the first in the search for the causative factor of sterility. That the injection of lipiodol is not entirely innocuous and may result in morbidity is substantiated by my own experience and that of others. In the diagnosis and localization of obstruction of the fallopian tubes in cases of sterility, the sequelae may prove harmful to the patient, if the method is applied indiscriminately.

### Conclusions

1. A review of the literature indicates that routine lipiodol injections are not harmless and that as a diagnostic method it carries a morbidity and mortality, even though small.

2. The use of lipiodol injection in cases of sterility is unwise until a complete history, careful bimanual examination, endocrine survey, air insufflation tests, study of the vaginal chemistry, investigation of cervical pathology, and the fertility of the male partner have been investigated.

3. Operation on tubes should be postponed for several months after lipiodol injections.

4. In sterility cases in which one tube is occluded or both tubes show partial occlusion as demonstrated by air insufflation, lipiodol injections should be used cautiously, as complete occlusion may result and thus defeat the primary objective.

5. Air insufflation yields the desired information

regarding the condition of the tubes, without harm and subsequent sequelae. This has been our experience in a large number of cases.

6. The contention that lipiodol may remain in the peritoneal cavity for one year or more and result in serious pathology has been verified by personal experience and the publication of others.

7. Misinterpretation is not unlikely in the reading of salpingograms by the inexperienced; errors are few after transuterine insufflation."

—Wendell Long.

### INTERNAL MEDICINE

Edited by L. J. Moorman, M.D., 1200 N. Walker, Oklahoma City; C. E. Bradley, M.D., Medical Arts Building, Tulsa; Hugh Jeter, M.D., 1200 N. Walker, Oklahoma City

**Catarrhal Diphtheritic Conjunctivitis.** J. Francois, Charlerio, Belgium, *The British Journal of Ophthalmology*, January, 1935.

This interesting article and its discussion do not lend themselves well to abstracting. The discussion reviews the literature from the time of the first report in 1893. It gives some of the objections of V. Morax to the prevalent theories of the infection with the essayist's answers to them.

Some symptoms of catarrhal diphtheritic conjunctivitis are: a muco-purulent secretion, conjunctival hyperaemia, palpebral erythema, preauricular adenopathy and a rhinitis. The condition is usually bilateral but it does occur rarely in one eye. The disease has no pathognomonic signs and the same symptoms are met with in many a conjunctivitis of another nature. The diagnosis is made on five principal points, viz:—inefficacy of the ordinary treatment, efficacy of antidiphtheritic serum, coexistence of a rhinitis, presence of a preauricular adenitis and the study of commensuratives. The most frequent complication is corneal lesions.

Catarrhal diphtheritic conjunctivitis is due to the pullulation of Klebs-Loeffler's bacillus in the conjunctival sac. It is most prevalent in newly-born babies and nurslings. It is met with only in the sporadic state. It may be a primary infection following nasal diphtheria but the rapid healing after the administration of the serum is a point in favor of the diphtheritic coryza. It may occur as a diphtheritic infection alone or along with other organisms. It is generally associated with other micro-organisms. Loeffler's bacillus sometimes causes only a catarrhal conjunctivitis, but it more often gives birth to a pseudo-membranous conjunctivitis.

The prognosis depends entirely upon the precocity of the diagnosis and of the serotherapy. When the correct diagnosis is not made for quite a period of time, there is the possibility of grave corneal complications. If the diagnosis is made before corneal lesions appear and antidiphtheritic serum is administered promptly, in suitable doses, then the recovery is very rapid. The secretion begins to dry up as early as the first day of the initial injection of serum and by the third or fourth day is entirely gone. The essayist's experience shows that 5,000 units daily for two days is usually sufficient. The corneal complications are treated in the usual manner of corneal lesions.

After an exhaustive study of the question the essayist draws the following conclusions: 1. Besides the

pseudo-membranous forms of diphtheritic conjunctivitis, there is a mere catarrhal form. 2. The latter is often met with in newly-born children and should be ranked among the ophthalmias neonatorum. 3. It shows no pathognomonic sign and has the aspect of nearly all muco-purulent conjunctivitis. 4. Because of its clinical aspect, it seems to be the most benign of all diphtheritic conjunctivitis; it may be complicated with serious corneal lesions. 5. It is refractory to the ordinary treatment, but it heals completely and rapidly under the influence of antidiphtheritic serotherapy.

**Clinical Presentation of Improvement in Surgical Repair of the Facial Nerve.** Dr. Arthur B. Duel, New York. *The Laryngoscope*, August, 1934.

Monkeys, baboons and cats were used in the experiments of Dr. Duel and Sir Charles Ballance in attempting to restore the function of the injured or severed facial nerve. At the beginning of the experiments they were of the opinion that one would seldom find a dehiscence of over 5 mm. in length. Their first two cases operated for direct repair had dehiscences of 27 mm. and 30 mm. respectively. Bell's anterior respiratory nerve was used for the grafts. It was found however that if more than 10 or 15 mm. of this nerve was excised that the ends were reunited with difficulty. The possibility of an atrophied respiratory muscle resulting from non-union of the severed ends caused the abandoning of the Bell's anterior respiratory nerve. The intercostal nerve has been used satisfactorily since.

It has been found that the functional result obtained did not depend so much on the length of the graft used or the length of time since the nerve injury so much as the condition of the muscle at the time of the grafting operation. If the muscle had a good galvanic response then after a successful graft, motion would be restored to the muscle. If the muscle is atrophied and there is no galvanic response, then even a successful graft will not restore motion to the muscle. Their opinion at the first was that nerve grafts could not be used successfully in infected areas. In the two above mentioned instances of the 27 mm. and 30 mm. grafts, the first lay bathed in pus for two months after the implantation and the latter traversed a badly infected area. Both cases did very well.

One of the unpleasant things in connection with this type of work was the long waiting period after a successful implantation of a fresh graft before the first evidence of conveyance of nuclear impulses to the muscles was apparent. It was an equally anxious period for both surgeon and patient. This delay in the transmission of the nuclear impulses was attributed to the slow emptying of the products of Wallerian degeneration in the graft. If this emptying was allowed to take place in the grafts, excised from the nerves, *in situ*, the waiting time was reduced from one-third to one-half of that when fresh grafts were used. Heteroplastic grafts were successfully used when several patients were available for operation at the same time.

The essayist believes that in cases of Bell's palsy which do not continue to improve until well should be operated. Satisfactory results have been obtained in these cases when the operation was done many years after the primary paralysis. The essayist realizes that sufficient time has not elapsed for him to speak authoritatively on this matter but the degree of success that he has so far attained makes him very enthusiastic of the procedure. Numerous photographs of patients, before and after operation, accompany the original manuscript.



Sinus Headache. C. Calvin Fox, M.D., Philadelphia. Archives of Otolaryngology, December, 1934.

A differentiation of pain in sinus infections and other types of headaches is partially given in this manuscript. One is reminded of the fact that a sinus infection may be present without pain and too often all obscure pains relative to the head are called sinus headaches. He classifies headaches into mechanical, toxic or reflex. The pain of a sinus headache is attributed to the stimulation of the trigeminal nerve and its associated sphenopalatine ganglion.

The pain is divided into two types in acute sinusitis: the neuralgic type and a constant type, more or less localized in the region of the diseased sinus. The neuralgic type occurs periodically, being present in the morning and decreasing in severity as the day advances. The pain which occurs in the region of the diseased sinus is due to the involvement of the mucous membrane or the bony wall of the sinus. It is tender to touch.

In chronic sinusitis the violence of the pain bears little relationship to the severity of the infection. There may not be any pain for long intervals of time and then an acute exacerbation occurs following a cold. The patient so afflicted may complain of an inability to concentrate.

It is recognized that localization and characteristics of pain are not always constant in sinus infections, but the essayist gives what in his opinion are the most important points in the acute and chronic stages of the different sinuses.

He characterizes an acute maxillary sinus infection with a sensation of pressure, fullness and distention; the ache may be dull or neuralgic; pain is present in the upper jaw and teeth; the teeth may feel tender, loose or elongated; the pain is intensified by jarring, stooping, sneezing, sudden moving of the head and excessive use of alcohol and tobacco. In chronic maxillary sinus infection there is many times not any pain unless the sinus is filled with polyps, cyst or tumor, when there is then a feeling of fullness. If the pain is present it usually takes the form of an infra-orbital or frontal headache, which is most marked in the morning.

Headache is the most constant and prominent symptom in acute frontal sinus infection. It is present from the time the infection occurs until it is cured or becomes chronic. The pain is localized in the region of the sinus and along the supra-orbital nerve. There is severe pressure and throbbing, lancinating neuralgic pains that are incapacitating and cause the patient to hold his head and groan with agony, making the thought of suicide welcome solution. In the chronic frontal sinus infection there may be no pain. If there is pain, it is not diffused as in the other sinuses. There is a slight numbness, heaviness or tension.

Acute anterior ethmoiditis causes a dull pain between the eyes at the root of the nose. Burning in the eyes, lacrimation and increase of pain when the eyes are used for long periods are typical. The pain is constant. With an acute posterior ethmoiditis, there is a temporal, occipital or parietal headache, increasing in intensity with the use of the eyes. In the sphenoidal infections the pain is inconstant and of less diagnostic aid than that in any other type of sinus infection. When there are several sinuses infected at the same time, pain is not of so much diagnostic value as with a single sinus infection.

Conditions other than sinus disease that may cause headache mentioned are: lesions of the brain, meninges and cerebral vessels; hydrocephalus, and disorders of

cranial nerves and of the cerebrospinal fluid; tumor of the brain; abscess of the brain; strain of extrinsic or intrinsic eye muscles; intranasal pressure due to enlarged turbinates, vasomotor disturbances, deflected septum, growths, scar tissue and crusts; pathology in the ear; syphilis; migraine; headache of gastro-intestinal origin; anemia; cerebral aneurysm, arteriosclerosis and arterial hypertension; nephritis disorders; neuralgia or neuritis; toxemia; thyroid disturbances; ovarian dysfunction; pituitary dysfunction; allergy; worry and anxiety; arthritis of the cervical spine; diabetes; high altitudes, poisons, drugs and environmental conditions and acute infections in the early stages.

## BOOKS RECEIVED

"Treatment by Diet," C. J. Barborka, M.D. J. B. Lippincott Co.

This author has handled an increasingly popular subject in a skillful and detailed manner.

While not a new subject, by any means, yet the manner of handling details is different from anything I've seen.

The tables of values for the many articles of diet is excellent. Besides his tables, showing caloric and vitamin contents of various foods, he has a considerable section devoted to recipes, which makes it a splendid reference for dieticians.

It should be of material aid in the control of metabolic, deficiency, nutritional and allergic diseases.

—Will C. Wait, M.D., McAlester.

## SILICOSIS AND PRIMARY CARCINOMA OF THE BRONCHUS

M. James Fine and James V. Jaso, Newark, N. J. (Journal A. M. A., Jan. 5, 1935), report a case in which carcinoma and silicosis in the lung coexisted. The reason for reporting the case is that they are of the opinion that the combination of the two diseases is not uncommon and that its apparent rarity is due to the fact that an insufficient number of cases of silicosis come to necropsy. These occupational dusts are chemical irritants. In the light of their knowledge of the part played by chemical irritants in the causation of cancer, it is not inconsistent to expect silicosis to be followed by carcinoma occasionally. The authors sound a warning that one must not make a hasty diagnosis of tuberculosis because a patient has symptoms suggesting pulmonary tuberculosis, without careful study. A careful history in their case would have suggested a diagnosis of silicosis rather than tuberculosis. The similarity of symptoms in the early stages of pulmonary tuberculosis, silicosis and primary carcinoma of the bronchus renders the diagnosis somewhat difficult. Early bronchoscopic examination would have revealed the new growth. Hilus carcinoma is by far the commonest variety. More than 90 per cent of cases fall into this group. The tumor is obviously bronchogenic, commencing in a bronchus and spreading along the bronchial tree and into the lung substance. It may originate in the bronchus outside the lung. The lesion without the bronchus varies from a mere roughening of the mucosa to a complete stenosis. Primary carcinoma of the bronchus in conjunction with silicosis is comparatively rare. All workers whose occupation entails exposure to the dust hazard should have their chest roentgenographed at the start of work, and at periodic intervals thereafter.

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## COMBINED ARTIFICIAL PNEUMOTHORAX AND PHRENICECTOMY FOR THE CLOSURE OF DIFFUSELY ADHERENT TUBERCU- LOUS CAVITIES\*

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SHAWNEE

The most valuable single method of collapse therapy of pulmonary tuberculosis is artificial pneumothorax. Unquestionably it has vastly improved the treatment of tuberculosis and is attested by the experience of many men. Unfortunately there are many patients in whom it is not successful.

Statistics clearly show that unless artificial pneumothorax produces a closure of tuberculous cavities and adequate rest of the lung, we cannot expect much in the way of ultimate results. It is obvious then, that any measure that would improve the end results or would contribute materially to the closure of cavities in conjunction with artificial pneumothorax would increase the benefits to the patient, as well as prevent this valuable procedure from being abandoned in view of some other means of collapse therapy.

It is with this end in view that the following cases are brought to attention whereby it is possible to close upper-lobe cavities diffusely adherent to the chest wall that are non-compressible under pneumothorax treatment alone by a combination of artificial pneumothorax and phrenicectomy. This form of treatment is maintained in no way to conflict with the closure brought about by the combination of intra-pleural pneumolysis as an adjunct to artificial pneumothorax, because of the fact that in the cases cited there was in

no instance a pleural adhesion of the type amenable to cauterization to interfere with the proper application of artificial pneumothorax, nor was intra-pleural pneumolysis in any case indicated.

The value of phrenic evulsions as an accessory to pneumothorax in the obliteration of upper-lobe cavities has been repeatedly stressed in literature. The literature fails, however, to go into much detail or comment on the mechanics of the treatment, and as far as I can determine little has been written concerning the consecutive phases in the closure of cavities of this type and their relationship to the pressure condition within the pleural enclosure. It seems that nearly all authorities maintain that the effect of phrenicectomy is based largely on the rise of the diaphragm. R. W. Matson<sup>1</sup>, in an article appearing in the "American Review of Tuberculosis" in the July, 1930, issue, entitled "Exairesis of the Phrenic Nerve in the Treatment of Pulmonary Tuberculosis," maintains that the results of an induced diaphragmatic paralysis, unilateral, are more dependent on the rise of the diaphragm or the degree of collapse of the lung tissue effected thereby, than upon merely placing the diaphragm at rest. The best results, he maintains, have always been associated with a marked rise of the diaphragm, and the poorest results have been in those cases in which little or no rise of the diaphragm took place.

E. J. O'Brien<sup>2</sup> maintains that the use of

\*Read before the annual meeting of the Oklahoma State Medical Association at Tulsa, Okla., May 22, 1934.



phrenicectomy as an adjunct to pneumothorax is indicated when adhesions to the lateral wall or apex prevent proper collapse of the cavity, especially if the base of the partially collapsed lung is adherent to the diaphragm and it appears that the ascent of the diaphragm in the chest will cause a relaxation of the tissue of the lung and allow a continuation of pneumothorax to cause full collapse of the lung.

The literature is filled with statements that tend to show that there is no exact appreciation of the physiological effects of evulsion of the phrenic nerve.

As an illustration of this I might cite Edwards<sup>3</sup> wherein he states that in cases where pneumothorax was used but which showed a tendency to open cavitation in the middle areas, there was a complete closure of the cavities by the rise of the diaphragm after phrenicectomy without the necessity of cauterization, and yet in the same article he admits that there appears no certain knowledge regarding the physiological effects of the evulsion of the phrenic nerve. There are many instances in the literature covering the increased collapsibility of the treated lung with a paralyzed diaphragm, but as was said in the foregoing, there is little to be had in an interpretation of the mechanics dealing with this effect.

In all this work there are few roentgenograms that stress the behavior of the cavities during the entire course of compression treatment. Most of these illustrations show the condition prior to the institution of compression therapy and after the closure of the cavity, without showing the ways in which the obliteration of the cavity is related to the compression procedures.

It might be well to say a word at this point concerning the mechanism of gas localization in the pleural cavity. The elastic tissue of the lung, like any other elastic substance, possesses both an expansive and a contractile force. Both these forces come into play in the physiologically functioning lung which is kept expanded in the air-tight pleural enclosure by virtue of the difference between the intra-pleural and intra-pulmonary pressures to which it is subjected. The intra-pulmonary surface is exposed directly to atmospheric pressure through its air passages, whereas the rigid wall of the thorax transmits only very little, if any, of the atmospheric pressure through its pleural surface, and the extremely distensible alveoli yield therefore

to the atmospheric pressure, putting the entire lung on a stretch. The intra-pleural pressure is therefore equal to the atmospheric pressure minus the tension of the expanded lung,

Any force that increases the intra-pleural pressure curtails the expansion of the lung, and this curtailment is directly proportional to the difference between the intra-pleural and intra-pulmonary pressures. Air introduced into the pleural cavity materially increases the intra-pleural pressure, but as long as this pressure is below that of the intra-pulmonary, the expansion of the lung will assert itself with each inspiration. When the intra-pleural and the intra-pulmonary pressures are equalized the contractility and expansibility of the lung tissues are in a state of equilibrium.

It will be readily understood that pathologic processes may diminish either the expansibility or the contractility alone, or both these properties might be lost at the same time. In atelectasis the expansive force of the pulmonary tissue is reduced, yet the contractile force is present. In hypertrophic emphysema the expansibility is present but the contractility is diminished. In caseous areas of the lung the expansive and the contractile properties are lost entirely; consequently such tissue will yield easily to any external pressure to which it might be subjected. Fibrous tissue possesses intrinsic contractile power to some degree, but it is very resistant to external forces; however once compressed it will never tend to re-expand. A tuberculous lung almost always exhibits all these pathologic processes in various proportions.

When a small amount of air is introduced into the pleural cavity of a chest containing a tuberculous lung free from adhesions, it will distribute itself according to the degree of resistance offered to it by the various portions of the involved pulmonary tissue. The caseous, soft areas are the first to cave in, the edematous and slightly infiltrated tissues follow, whereas the uninvolved elastic lung tissue expands fully with each inspiration and displaces the introduced gas or air into the area left by the compressed inexpandible diseased portion.

Since the upper-lobe is affected in the great majority of cases of pulmonary tuberculosis an erroneous impression was gained by some that gas introduced into the pleural cavity will always compress the apex first. Such, however, is not the

case, Due to these biophysical laws of pneumodynamics just explained, gas injected in small amounts will, as a rule, localize over the diseased pulmonary area no matter where it may be situated—apex, middle portion, or base, provided no pleural adhesions are present.

The difference in consistency of pathologic and normal anatomic lung tissue is another fundamental principle influencing the localization of gas in the pleural cavity. Soft and edematous lung tissue contains little air, and it requires but little compression to render such tissue entirely airless, reducing it to a solid mass until it reaches the limit beyond which it cannot be compressed any further. The volume of functioning lung tissue, like a sponge, consists of a great deal of air enclosed in its alveoli, and therefore when it is rendered into an airless and solid mass by high intra-pleural pressure it is reduced to a much smaller volume than the diseased tissue would be under the same force of compression. This is the fact that caused the older observers of artificial pneumothorax to think erroneously that healthy lung tissue becomes more easily compressed than diseased tissue, because they administered larger amounts of air, creating a positive intra-pleural pressure often very high when measured in millimeters of mercury.

In this series of cases treated by pneumothorax with added phrenicectomy the changes in the cavity have been observed by frequent fluoroscopic examinations and serial roentgenograms. A study of those changes shows that induced pneumothorax displaces an upper-lobe cavity downward and inward, provided the cavity is not diffusely adherent to the chest-wall. This displacement is a result of the property of the treated lung to retract under compression toward a fixed point, attachment to the hilum. Along with displacement, compression of the cavity may take place in the same direction. If the cavity is attached to the parietal pleura by string or band adhesions with a limited capacity for stretching and, if one of the adhesions ceases to yield before the cavity is closed, the latter becomes suspended between two fixed points: (1) attachment to the hilum, and (2) attachment to the fixed adhesion. Further raising of the pneumothorax pressure tends to continue compression of the upper-lobe toward one of the fixed points. The direction, in which the upper-

lobe retracts now, is the resultant of two counteracting forces applied to the lobe: (1) tension toward the root, and (2) contraction capacity of the stretched adhesion. With an active diaphragm, tension toward the root dominates and the upper-lobe continues to retract toward the same fixed point, attachment to the hilum. The cavity, held out by a fixed adhesion and unable to recede more from the chest-wall, is pulled by the retracting upper-lobe toward the root. Stretching and enlargement of the cavity results. Following paralysis of the diaphragm there is a gradual relaxation of the treated lung and abatement of its tension toward the root. The contraction capacity of the stretched adhesion becomes the prevailing force, and the upper-lobe commences to retract in a reverse direction, away from the hilum toward the second fixed point. Tugging on the cavity ceases and its compression proceeds toward the attachment to the adhesion. Closure of the cavity is not influenced by the amount of elevation of the paralyzed diaphragm. The latter may descend under high pressure to levels lower than before the phrenicectomy, but obliteration of the cavity continues unhindered.

Demonstration of the following cases is based on the roentgenographic evidence obtained in each case:

#### CASE NO. 1

Reg. No. 53, fiscal year 1933, T.D., female, age 24 years.



FIGURE 1



November 16, 1931. Right upper-lobe cavity irregularly shaped. Transverse diameter approximately 2 cm., oblong 4 cm.

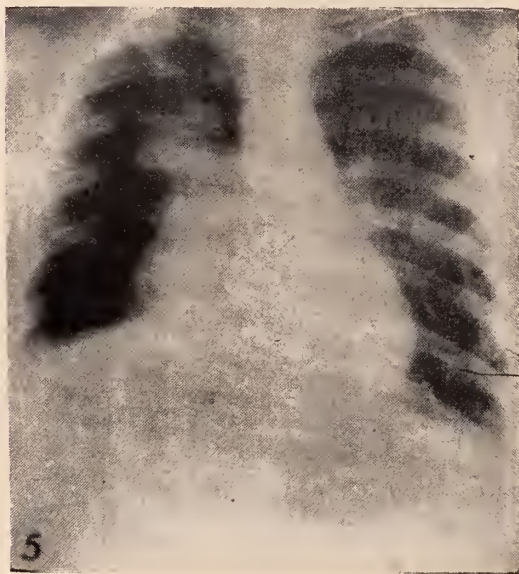


FIGURE 2

February 12, 1932. Pneumothorax 3 months. Cavity displaced inward and downward. Transverse diameter 3 cm.; oblong increased to 6 cm. Band adhesions from dome of chest to upper portion of cavity. It will be seen that the cavity has grown larger under pneumothorax treatment, being mainly elongated in the line connecting the attachment to the adhesion with the hilum. A small pleural effusion has occurred. Pressures at this time were minus 8, plus 1.

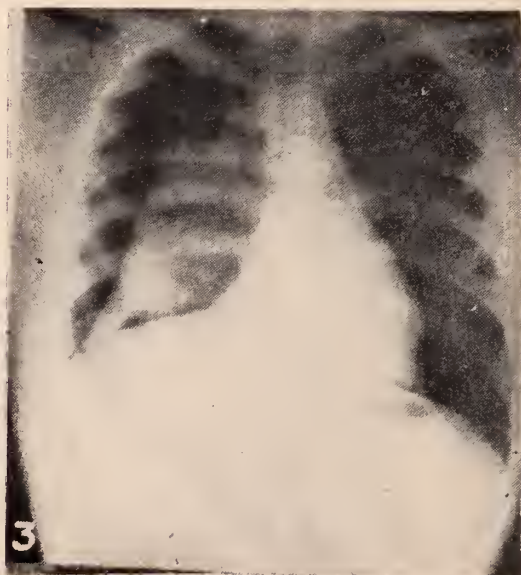


FIGURE 3

April 6, 1932. Pneumothorax approximately 5 months. Phrenicectomy done 3/25/32. There is no inward compression of the cavity but the obliteration is upward with the vertical diameter shortened 1 cm. from its hilar end. Diaphragm elevated  $2\frac{1}{2}$  cm. The basal effusion appears to be somewhat diminished. Pressure: minus 6, plus 1.

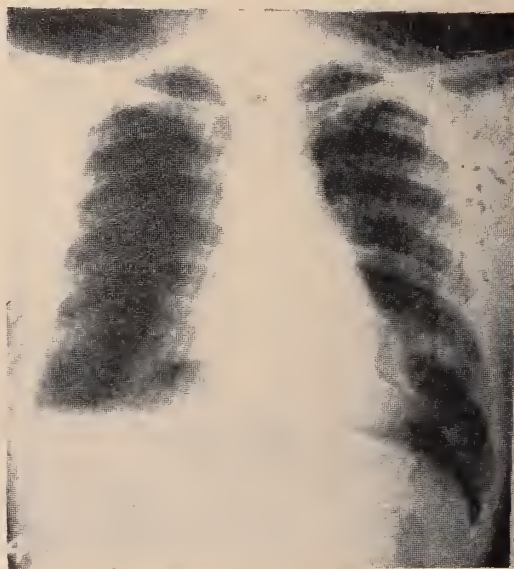


FIGURE 4

June 10, 1932. Pneumothorax approximately 7 months. Phrenicectomy approximately 3 months. Cavity is diminished upward and inward. Its vertical diameter is  $2\frac{1}{2}$  cm.; transverse 2 cm. Diaphragm depressed  $1\frac{1}{2}$  cm. and appears lower than before induction of artificial pneumothorax. Pressure: plus 1, plus 4.

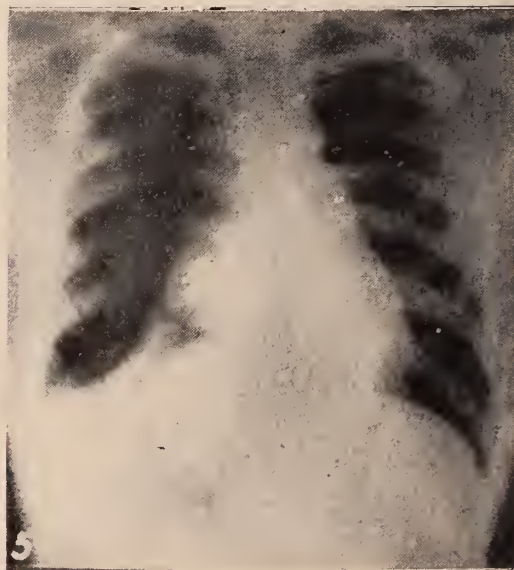


FIGURE 5

August 16, 1932. Pneumothorax approximately 9 months. Phrenicectomy approximately 5 months. Cavity is closed; diaphragm descended lower than in the preceding figure by 1 cm. lower than before induction of pneumothorax. Effusion is clearing and the pressure reading is plus 5, plus 8.

There is no ascent of the paralyzed diaphragm in this case to interfere with the lifting of the treated lung. Obviously, the elevation of the diaphragm is not responsible for the closure of the adherent cavity. It is the additional rest obtained by the treated lung which brings about mechanical changes for favorable molding of the cavity.

If the cavity walls are pulled by multiple adhesions in conflicting directions the process of obliterating it becomes more complicated and retarded, and it would seem that evidently the cavity closes in the direction leading to the attachment of the most resistant adhesion.

## CASE NO. 2

Reg. No. 271, fiscal year 1933, E.P., male, 23 years of age.

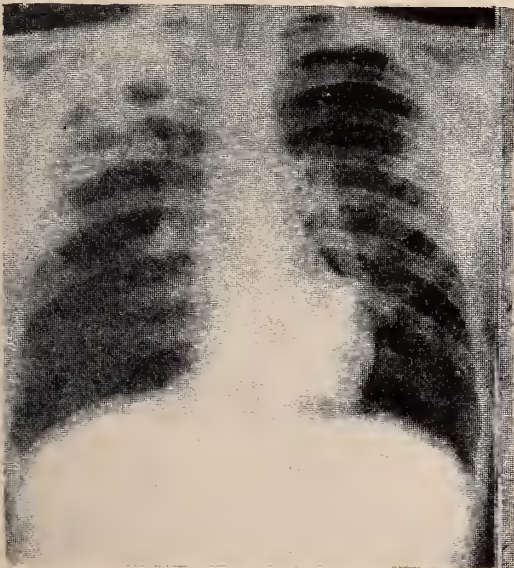


FIGURE 1

February 2, 1933. Shows right upper-lobe cavity situated midway between the mediastinum and the periphery of the chest, bound above by the clavicle and below by the second rib. Transverse diameter  $2\frac{1}{2}$  cm.; vertical  $3\frac{1}{2}$  cm. Small pleural effusion.

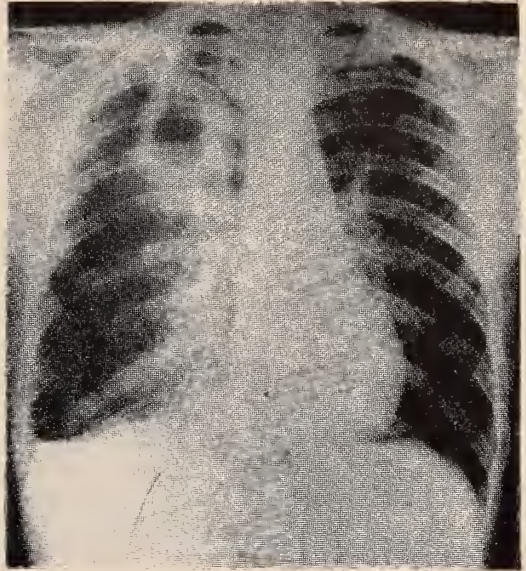


FIGURE 2

April 6, 1933. Pneumothorax approximately 2 months. Cavity receded downward and inward. The displacement is caused by the retraction of the upper-lobe toward the root and is made possible by the stretching of adhesions between the lateral chest wall and the upper-lateral aspect of the cavity. Both diameters are elongated, due to the stretching of the cavity downward and inward by the retracted upper-lobe. Transverse diameter 3 cm., vertical  $4\frac{1}{2}$  cm. Small pleural effusion. Pressure reading: minus 3, plus 2. Phrenicectomy done 6/7/33.

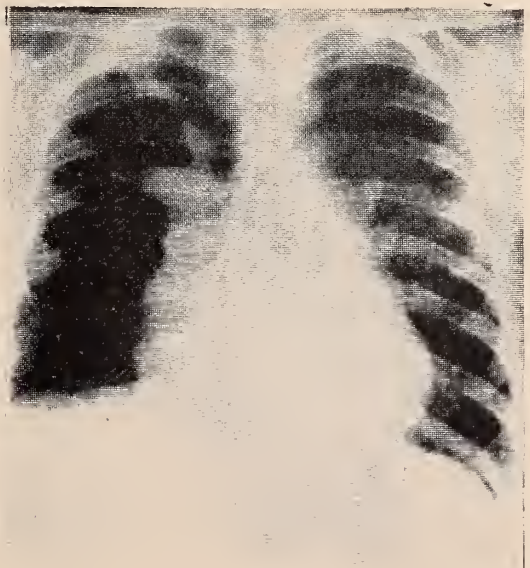


FIGURE 3



July 10, 1933. Pneumothorax approximately 5 months. Phrenicectomy approximately 1 month. Cavity obliterating upward and inward by retraction of its outer walls in those directions. Oblong diameter  $4\frac{1}{2}$  cm. It is being shortened from the hilar end. Transverse diameter  $2\frac{1}{2}$  cm. Length of adhesion unchanged. Diaphragm elevated 2 cm. Pleural effusion decreased. Pressure: minus 2, plus 7.

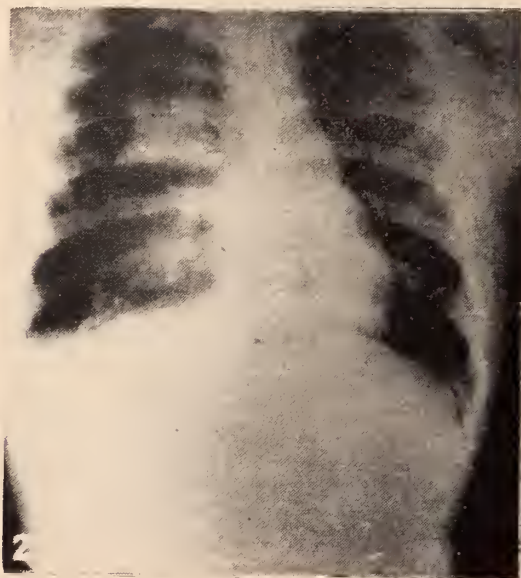


FIGURE 4

August 16, 1933. Pneumothorax approximately 6 months. Phrenicectomy approximately 2 months. Cavity obliterating upward. Oblong diameter only 2 cm. Transverse diameter unchanged. Diaphragm elevated approximately 4 cm. Pleural effusion at the same level. Pressure: minus 6, plus 4.

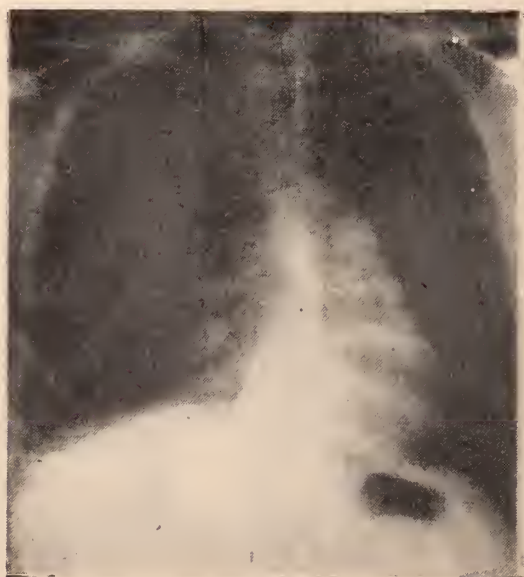


FIGURE 5

September 25, 1933. Pneumothorax approximately  $7\frac{1}{2}$  months. Phrenicectomy approximately 3 months. Diaphragm 2 cm. lower than on the previous plate. Cavity almost closed. Adhesions are exposed—mostly due to the retraction of the outer cavity wall. Pressure: minus  $1\frac{1}{2}$ , plus 9.



FIGURE 6

October 12, 1933. Pneumothorax approximately 8 months. Phrenicectomy approximately 4 months. Cavity closed. Diaphragm elevated only  $2\frac{1}{2}$  cm. Pressure reading: minus 2, plus 6.

Thus with the diaphragm paralyzed increased pneumothorax pressures cause compression of the cavity from its hilar aspect toward the attachment to the adhesion. Prior to the phrenicectomy, raising the pressures resulted in pulling the cavity walls from the adhesions to the hilum end and brought about enlargement of the cavity.

The elevation of the paralyzed diaphragm in this case would suggest that the stump of the treated lung has been raised upward, causing relaxation of the adhesions. But, with the adhesions relaxed, its attachment to the cavity ceases to act as a fixed point. Compression of the cavity by the surrounding pneumothorax would then continue toward the only fixed point attached to the hilum, and the last portion to obliterate would be at the hilar aspect.

All the plates shown present the inspiratory phase with the paralyzed diaphragm in its highest position due to paradoxical movement while before paralysis the diaphragm is, during inspiration, in its lowest position. Raising of the paralyzed dome,

as shown by such a comparison, becomes, therefore, debatable.

To maintain the adherent cavity closed constancy of the intra-pleural pressure is essential. The proper pressure is determined in each case and maintained evenly by frequent refills. Pressures lower than the optimum lead to re-opening of the cavity. If the latter has remained collapsed about three months refills may be given at longer intervals.

It should be understood that the cavity is held closed by proper pneumothorax pressures and not by elevation of the paralyzed diaphragm. Successful closure of an adherent upper-lobe cavity is accomplished occasionally by a pleural effusion complicating pneumothorax. The factor leading to obliteration of the cavity in the presence of pleural effusion is probably temporary paralysis of the diaphragm caused by the involvement of the diaphragmatic pleura and constancy of the intra-pleural pressure, resulting from lessened absorption of injected air.

Diffusely adherent upper-lobe cavities do not recede from the chest wall with the induction of artificial pneumothorax; the injected air is prevented from surrounding the cavity walls and compressing them toward a fixed point. Obviously, paralysis of the diaphragm cannot improve the collapsibility of such cavities, but with the closure of the cavity expectoration generally ceases and the sputum becomes negative for tubercle bacilli.

#### CONCLUSIONS

Upper-lobe cavities diffusely adherent to the chest wall are non-compressible under pneumothorax treatment alone. Cavities attached to the parietal pleura by fixed string and band adhesions can be compressed by pneumothorax combined with phrenicectomy. The explanation of the combined treatment is based on the fact that retraction of the compressed upper-lobe toward a fixed point is influenced by two counteracting forces: first, the tendency and tension of the lobe toward the root, and secondly, the contraction capacity of the stretched adhesion. While the diaphragm remains active tension toward the root dominates and the upper-lobe, suspended before two fixed points, continues to retract toward the hilum. The cavity is pulled from the attachment to the adhesion and the enlargement of the cavity and tearing of the treated lung may take place. Phrenicectomy is indi-

cated as soon as such enlargement becomes appreciable. Following the paralysis of the diaphragm the tendency of the lung to retract toward the root or the hilum gradually diminishes. The contraction capacity of the stretched adhesions commences to prevail and the upper-lobe begins to retract toward its attachment to the adhesion. The raising of the paralyzed diaphragm seems to play no part in the obliteration of the cavity because cavities seem to close in the same manner, whether the diaphragm is raised, lowered or remains unchanged. This has been noted particularly in left-side cavitations which seem to close equally well, although the left diaphragm seldom rises to a high level. It would appear that several months are required for relaxation of the lung and closure of the cavity after a phrenicectomy, in contrast to the rapid closure obtained by cauterizing the holding adhesions by means of intra-pleural pneumolysis. It is assumed, of course, that the adhesions are accessible for cauterization, although x-ray evidence often fails to provide positive proof of this fact. The continuance of the cavity closure must be brought about by the maintenance of the proper pressure by refill.

DISCUSSION—*Dr. G. S. Baxter*, Shawnee:

The surgical treatment of pulmonary tuberculosis has assumed a prominent place in the recent advances in general surgery. Surgical methods of increasing rest of the lung have been developed because of late diagnosis and inefficient treatment. It has come to stay, for it is daily prolonging and saving lives which otherwise could expect little from ordinary home and sanatoria regime.

Mechanical splinting of lungs has contributed to the statistics of cures an additional 36% to otherwise hopeless cases and has reduced the hospitalization of the sufferers to a very appreciable degree. Any method which offers a quicker restoration to tuberculous individuals to economical usefulness and the closure of an open case cannot be evaluated. Pulmonary tuberculosis can be successfully treated, and what is now needed is a technique to be developed to decrease mortality and enlarge indications for operative treatment.

It is generally admitted that any procedure designed to produce rest of diseased pulmonic tissue, close cavities and shorten the period of hospitalization is warranted. The old tabus and limitation



of mechanical treatment are about obsolete, and involvement of the contralateral lung no longer contraindicates therapeutic collapse. Bilateral collapse is gradually increasing, and but few unilateral cases are not suitable to some form of collapse therapy. The advocates of bed rest alone for indefinite periods of time, with resort to collapse therapy only when cavities and infiltrated pulmonary tissue have not shown satisfactory improvement, are fewer in number. Since bed rest is recognized as being not a method of attack but rather a method of resistance, it would seem reasonable in suitable cases to subject them to some form of surgical treatment and then advise bed rest as a secondary measure.

The simplicity and value of pneumothorax cannot be estimated. It is recognized as being the most useful and widely used measure of all collapse therapy. It has the dual advantage of being easily administered and readily discontinued. Phrenicectomy, which some observers claim results in 22% cures and still a greater percentage of cavitation cases rendered harmless to others, is simple, non-hazardous, and may be done outside the hospital. During these times of economic stress when hospitalization for long periods of time is prohibitive, pneumothorax or phrenicectomy combined with standardized rest and diet regime at home offer a

ray of hope not hitherto experienced. Interruption of the phrenic nerve is a useful procedure for acute infiltrating lesions, in recent thin walled cavities, as an aid to pneumothorax when the base of the lung is uncollapsed and in adhesive cases where pneumothorax cannot be practiced.

Since the phrenic has important anastomoses with the great sympathetic, the effect of evulsion is no longer regarded as purely mechanical. It is obvious that in some cases of phrenicectomy where the diaphragm ascends only a few cm. the lung volume reduction would not be adequate to produce a closure of the cavity by mechanical compression, yet, in some mysterious way, the desired results are obtained. In certain early cases phrenic nerve operation will obviate the necessity for subsequent major operations.

It is always advisable to select and practice some form of selective collapse which will adequately and efficiently restore the pathologic lesion and at the same time save the good portion of the lung from obliteration.

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## HELIOOTHERAPY AND PULMONARY TUBERCULOSIS\*

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Heliotherapy has grown to be one of the helpful agencies that we have to offer in the treatment of those suffering from pulmonary tuberculosis. It has been developed through the ages, starting at least as far back as the time of Inknoton, the greatest of all sun worshipers. He was an Egyptian living some 3,000 years ago. Every ancient religion of which we have record is bound up, indissolubly, in the tenets of sun worship.

Herodotus is perhaps the first who goes into detail concerning heliotherapy as a routine measure. Over 400 years before the Christian era, Herodotus, as quoted by Oribasius, wrote: "Exposure to the sun is especially indispensable to people requiring restoration and increase of musculature. One should take care that in winter, spring, and autumn the sun should have a direct access to the sick person; in summer and in case of feeble individuals, this method is to be avoided; the head is to be covered during the cure."

\*Read before the Southeastern Oklahoma Medical Association at its meeting at Talihina, Oklahoma, on Tuesday, June 26, 1934.

As far as the underlying principle is concerned, this might have been written yesterday. Herodotus chronicled that light was to be considered as both a prophylactic and a curative influence.

Others who have had a part in the use and development of this form of treatment include many names, a few of which will be mentioned with their outstanding contribution: Hippocrates (460-377 B. C.), it is said, was accustomed to prescribe sun-baths for his patients and traced the actions of sunlight. Antyleus (300 B. C.) laid down in detail the routine of the sun-bath. Cicero and Pliny discovered the fact that leading citizens of Rome were accustomed to have solaria constructed in their homes; at the seashore, arenarias were provided for a complete exposure of the nude body. Cauvair in 1815 published a paper entitled "Les Bienfaits de l'insolation," in which he says: "Speaking of scrofulous infants, send them to the country, feed them up as well as possible, but above all, make them roast, burn, roast in the sun," Loebel (1815) lists as contra-indications, hemorrhage, congestions, stomach and bowel disturbances, acute inflammatory conditions and lung conditions associated with inflammation. In 1840 Ollier and Poncet of Lyons reported cases of tuberculous arthritis treated by sunlight.

The three individuals among others concerned with the further development of modern heliotherapy were Bernhard of Samaden; Rollier of Leysin, and Finsen of Copenhagen. Niels Reyberg Finsen, born of Icelandic parents, was graduated from the University of Copenhagen in 1890. He proved definitely that the actinic rays found in the blues and violets of the spectrum possess the curative and stimulating properties inherent in sunlight. In April, 1896, he founded his light institute at Copenhagen, and was particularly successful in treating the various types of skin tuberculosis. Finsen was the outstanding pioneer in the promotion of artificial heliotherapy in the same way that Rollier was the outstanding pioneer in the advancement of natural heliotherapy. Finsen used primarily the carbon arc lamp. He died in 1904.

In 1902 Bernhard used sunlight to treat a suppurating abdominal wound. He had noted that the Swiss butchers dried their meat in the sun; this observation and the success achieved by Finsen in employing artificial sunlight impelled Bernhard toward his suntreatment experiments. He

subjected to the direct sunlight badly healing wounds, and later, cases of external tuberculosis.

Gauvain says, "Rollier is the 'High Priest' of the modern sun worship; he has led us back to sunshine and simplicity, to the first principles of light and life." Rollier, unaware of Bernhard's procedures, had opened his sanatorium at Leysin in 1903, and began his epoch-making work. The clinic was situated in the Alps of the Canton Vaud at a height of 1,300 meters (feet: 1421.4). It was the first clinic devoted exclusively to the systematic treatment of external tuberculosis by heliotherapy. At this altitude the air in the summer time is never oppressively hot; in winter the rather intense cold is counteracted by the continued brilliancy of the sun. The patients at the Rollier institution were given the benefit of cool fresh air, and of brilliant sunshine applied by means of sun-baths to the whole surface of the body.

Advance in mechanical apparatus has kept pace with the scientific progress in heliotherapy. From the first, the two distinct types of apparatus have been favored, the carbon arc lamp and the mercury vapor arc in vacuum. Some heliotherapists use the artificial source of light exclusively and some in combination with sun when sunlight is not available as on cloudy days. Kromayer invented the water-cooled vapor quartz lamp devised for local application.

A few words on the subject of physics are in order in a discussion of heliotherapy. Sir Oliver Lodge has defined light as "an electro-magnetic disturbance of the ether." Light consists of waves of varying lengths that travel in every direction from the point of propagation at a rate of 183,000 miles per second. When a beam of light is passed through a prism it is broken up into the colors of the rainbow. The colors—red, orange, yellow, green, blue, indigo, and violet, represent the visible spectrum.

This visible segment, however, constitutes by no means the entire electro-magnetic spectrum. Luckiesh, indeed, says that if the electro-magnetic spectrum could be projected as one view and the visible portion were one foot long, the entire spectrum would be seven million miles in length. The invisible spectrum, consequently, constitutes a most important phase of the radiant energy. At one end of the visible spectrum is found the infra-



red, consisting of wave lengths that grow longer and longer the farther we go beyond the visible red, to the Hertizian employed in both ultra-violet and diathermy. At the other end of the visible spectrum beyond violet, occur invisible ultra-violet rays that grow shorter and shorter the farther we go beyond the violet. At this end, still beyond the ultra-violet rays, occur the short x-ray and the gamma rays of radium, and finally, the Millikan cosmic rays recently described.

The units in which the rays are measured are the Angstrom unit, the millimicron, and the micron. The Angstrom unit—one ten-millionth part of a millimeter—is the unit generally used for the measurement of the waves of radiant energy. It is a wave length characteristic of the radiant energy just beyond the ultra-violet rays and approximately the wave length of the softest of the x-rays. It enables us to talk of x-ray in terms of tens, in ultra-violet radiation in figures approximating three thousands, and of visible light in figures up to about seven thousands.

The micron is the thousandth part of the millimeter, and millimicron is the millionth. Millimicrons are converted into Angstroms simply by adding another zero; for example, six thousand millimicrons equal sixty thousand Angstrom units.

We also have velocity and frequency to consider in speaking of radiant energy. The velocity is 183,000 miles per second while the frequency varies inversely as the wave length, the shorter the wave length the greater the frequency.

The long red rays have a comparatively small number of vibrations. The short ultra-violet has about six hundred trillion per second. It is perhaps to this factor, the very great frequency of the short actinic rays, that we must attribute the special chemical activity of the ultra-violet ray.

Composition of the visible and the invisible spectrum from the gamma region to infra-red:

#### TABULATION

	Gamma Rays	1 Angstrom Unit
Ultra-violet	2,000 (extreme)	to 4,000
Red	6,200	to 7,000

#### PHYSIOLOGICAL CONSIDERATION

We know, in a general way, that sunlight is essential both to the growth of plants and the growth of living organisms; that sunlight influences certain

phases of metabolism; that sunlight has definite bactericidal qualities. We have learned from the work of Finsen and others that the different rays have different actions. The extremely long Hertizian rays are used for radio telegraphy, and the somewhat shorter infra-red rays, as their frequency increases, supply heat. We know that the range of visibility extends from wave length of 7,700 at the red end of the spectrum to a wave length of 3,900 Angstrom units at the violet end. Beyond the range of visibility we have the ultra-violet ray of high frequency which is germicidal, tonic, or toxic depending on the dosage.

If a patient is submitted to treatment of average doses of artificial sunlight erythema occurs in the irradiated area after an interval of 5 to 8 hours. The erythema is usually accompanied by some pain. After a few hours the pain lessens and the erythema becomes dark and colored. These changes are accompanied by a sense of well being.

The area then becomes irritated and desquamation starts and continues for six or seven days. Following desquamation the part becomes pigmented or tanned; this pigmentation remains for varying periods of time and gradually disappears. This pigmentation is due to the ultra-violet ray and occurs with varying intensity and speed depending upon the amount and duration of exposure and on the quality of the skin. Blondes or redheaded individuals with fine textured skin do not pigment easily. They burn very readily unless precautions are taken. Brunettes, on the other hand, it is well known, take a beautiful coat of tan. This pigmentation acts as a protection. We will not go into the theories of the explanation of the physiological sequellae of irradiation. Suffice it to say that there is the Cholesterol, the Dixon, the Nerve Stimulation, and the Direct Absorption theories put forth as an explanation of the results of irradiation.

The general action resulting from the use of heliotherapy comprises a feeling of warmth, well being, exhilaration, and buoyance. Mental activity is enhanced and fatigue and depression tend to disappear. We have already mentioned its beneficial influence on metabolism which as a whole is stimulated. In the matter of calcium and phosphorus metabolism the influence is especially favorable, resulting in a def-

inite increase in absorption and deposition of these salts.

Some authorities claim that heliotherapy tends toward a speeding up of generalized endocrine function. The effect seems to be particularly prominent in the case of the thyroid and sex glands. The fact that menstruation appears earlier in girls in sunny climates is adverted to in attempting to establish the relationship of sun therapy to endocrine functions.

The effect on the blood of sun therapy includes an increase of calcium content and decrease of coagulation time, due undoubtedly to the increase of calcium.

As regards the cellular content, there is a tendency to an increase of the reds, and, according to some authorities, the lymphocytes also are increased. Sooy reports that the blood platelets are increased through artificial radiation. Occurrence of a leukocytosis is reported by most authorities.

Young rats fed on diets deficient in vitamin A and anti-rachitic substances are prone to develop rickets, xerophthalmia, infection of the ears, and cease to grow. Exposure to ultra-violet rays prevents the occurrence of rickets in such animals, causing them to grow at the normal rate, but does not prevent the occurrence of ophthalmia. Undoubtedly the actinic ray and the vitamin are closely bound up in the case of rickets. The relationship, however, does not seem to prevail in the case of other deficiency diseases. Scurvy, beriberi, and other diseases may occur in the presence of adequate sunlight. In addition to its effect on vitamin D, ultra-violet radiation is supposed to enhance the action of the fat soluble vitamin A.

Bactericidal action of the actinic ray was definitely demonstrated by Robert Koch in 1890. Koch showed that the tubercle bacilli readily succumb to light. Bacilli, spread in thin films, are killed by direct sunlight in ten minutes. The chief bactericidal effect is allocated to the short waves of the far ultra-violet segment. The light affects not only the bacteria, but also their spores, products and secretions. The irradiated tuberculin apparently loses its toxicity and is powerless to induce the intra-dermal reaction. Bactericidal spores are more susceptible to ultra-violet light than either to heat or chemicals; however, if a lethal dose is not administered the bacterial life may be stimulated.

Experiments have shown that sunlight has an invigorating effect on mentality.

Everyone, child and adult, feels better in the sunshine. Even animals and birds show quite clearly their reaction of joyousness and well being toward solar radiation. Tests made in England in special schools for the physically defective children showed that those at the Alton Institution, where heliotherapy was practiced, were mentally nearly a year in advance of children of similar age in a London institution, who had not received treatment.

The length of this paper will not allow me to compare the effects of natural with artificial sunshine,

#### INDICATIONS

Heliotherapy should be used with great caution in the treatment of pulmonary tuberculosis. In the active tuberculous process of the exudative type particularly, great harm can be and is frequently done. In cases of fibroid tuberculosis with very little or no exudate, heliotherapy has been used with some success but here too only with very great caution.

Sunlight treatment, of course, should not take the place of usual routine treatment—rest, fresh air, diet and measures such as artificial pneumothorax, phrenicotomy, and thoracoplasty.

*Goldberg* has given as indications:

1. Pre-tuberculous individuals, particularly contacts, are frequently benefited by tonic treatment either with natural or artificial heliotherapy.

2. Early afebrile cases: The early afebrile or slightly febrile individuals of the fibroid type, with a sluggish apical lesion, is occasionally benefited.

3. Chronic fibroid tuberculosis: Some cases of chronic fibroid tuberculosis, which seem to be definitely blocked at a certain stage in their progress, are given the necessary added impetus toward improvement. Patients who have remained for years in a more or less stationary condition seem to be given, by heliotherapy, the slight added lift or pull which is necessary to get them ahead,

4. Pleural tuberculosis: Pleural tuberculosis, either serous or dry, reacts well either to artificial light or solar exposure.

5. Tuberculous empyema with sinus: This condition may be frequently helped considerably by irradiation. The sinuses



seem to be helped greatly by the local treatment.

*Howson*, Carl R., says about indications for heliotherapy:

"Extra pulmonary lesions which are complicated by pulmonary involvement require the same care in their treatment as those cases which are pulmonary."

*Mayer*, Edgar, has to say:

"The most favorable response to solar exposures have been shown by the so-called pre-tuberculosis of children, and by the tuberculosis of the lymph nodes (including hilum), the pleura, bones, and joints, peritoneum, and intestines.

"Less favorable results are usually obtained in pulmonary, genito-urinary, laryngeal, ocular, aural, and cutaneous tuberculosis.

"In my own experience of ten years (paper, 1927), with the use of the quartz mercury vapor light as an adjuvant, the most favorable response has been encountered in intestinal tuberculosis."

He also lists as responsive to radiation with mercury quartz vapor lamp, "hilum glandular tuberculosis" of children and adults.

*Rollier*, A., gives: "The types that derive the greatest benefit from heliotherapy are, in diminishing order: 1, post pleuritic types; 2, fibroid types; 3, chronic bronchial types, especially when superficial; 4, the scattered type; 5, the type with stationary cavity; 6, the spleno-pneumonic type of Gaucher."

*LoGrasso*, Horace, says that "in cases other than those with marked activity, those with generalized tuberculosis, or those while having hemorrhages (and until two or three weeks thereafter) are indicated for heliotherapy."

*Watson* gives: "Childhood (primary complex) lymphatic and tracheo-bronchial, adult (tissue) and selected cases of fibroid tuberculosis."

*Bach* gives: "In all but the progressive, exudative and destructive stages of pulmonary tuberculosis."

*Weinbren* gives: "Treatment may be safely given provided there is little evidence of breaking down of lung tissue."

*Kirkwood* gives: "In any fibroid or nodose pulmonary lesion which shows little or no perifocal reaction and which is not

complicated by arteriosclerosis, hypertension or uncompensated cardiac disease."

*Cooper* and *Laird* both thought heliotherapy was of most use in cases which showed a tendency to fibrosis.

For laryngeal tuberculosis most authorities advise a combination of general and local exposure. Local exposure is carried out by means of reflected light or by direct irradiation through means of fused quartz applicators attached to the Kromayer water-cooled mercury quartz lamp. In this way irradiations by the Kromayer water-cooled mercury quartz lamp are started at thirty seconds and gradually increased by one-fourth to two minutes at each exposure twice a week up to fifteen minutes.

Mayer practiced local irradiation twice a week, using reflectors, starting at two minute periods and gradually increasing up to forty-five minutes.

Dr. Alexius Forster has perfected a series of mirrors by means of which sunlight is reflected into the throat. Exposures of thirty seconds gradually increasing up to about twenty minutes once or twice a day is used. Excellent results have been obtained in the relief of pain.

Tuberculosis of the eye has been treated by direct exposure to ultra-violet rays by some without apparent harm. Others recommend that light filters or closed lids be interposed between eye and source of ultra-violet rays.

Artificial heliotherapy seems quite effective in treatment of tuberculosis of the glands. The dosage must be carefully regulated using general as well as local irradiation. Natural heliotherapy seems to be preferred in this condition, however.

In tuberculous peritonitis with proper care and conscientious supervision the results obtained from irradiation of sunlight are quite encouraging. The exudative form of peritonitis responds especially well. Large exudates, particularly, disappear after five or six weeks. The fibro-adhesive form also responds well.

Intestinal tuberculosis, including tuberculous tumors in the ileocecal region, improve markedly under irradiation to sunlight. However, Mayer, among others, reports that better results are obtained from the use of the mercury vapor lamp. The ileocecal tumor rapidly disappears and the intestinal symptoms, flatulence, dis-

comfort after eating, pain and diarrhea, also disappear.

*Howson* gives as *contra-indications* to heliotherapy:

1. Acute tuberculosis of all types.
2. Acute stage of chronic tuberculosis in chronic types with much fever.
3. Those who have recently had hemorrhages.
4. Those who burn but do not tan.
5. The aged and those whose vitality is so depressed that they are unable to react.

*Crockett* gives the following *contra-indications*:

1. Cases of progressive disease anywhere.
2. Cases showing marked and progressive tissue destruction.
3. Cases with toxic manifestations, e. g., amyloid disease or cohexia.
4. Cases which show pyrexia due to sepsis.
5. Cases of hyperthyroidism.

*Weinbren* is emphatic that not the extent of the disease but the state of activity is the guide, and that there is no single *contra-indicating* factor if the cases are selected along these lines. A high degree of toxemia is probably the most suggestive factor.

*Laird* thinks that the treatment is very little more dangerous in active cases than in the afebrile cases for which he recommends it, but he admits that in the acute cases the treatment is not likely to prove of much value.

*Gahwyler* gives the following *contra-indications*:

1. Exudative pulmonary processes.
2. All pneumonic or broncho-pneumonic cases.
3. High fever.
4. A tendency to hemorrhage.
5. All cases which are inclined to be progressive and which show a rise of temperature after the slightest irradiation.
6. All cases of toxic manifestations, intestinal or cardiac.

*Wurtzen* of Copenhagen holds views which are much opposed to any of the above. He says that there are no *contra-indications* to this form of treatment; it

is all a question of dosage. In his cases the treatment is abandoned only when the patient is too ill to go to the light room.

*Watson*, S. H., gives:

1. Severe forms of heart disease.
2. Arteriosclerosis.
3. Nephritis where not of tuberculous origin.
4. Temperature of more than 102 degrees F. (rectally). (Omit light bath for a day or two.)
5. Go slow when patient is ill.
6. All exudative pulmonary forms in adults.

*LoGrassa*, Horace, and *Balderry*, give:

1. Progressive pulmonary lesions with high fever and rapid pulse.
2. Insomnia.
3. Hyperthyroidism and obesity, particularly when present in patients with valvular heart disease.
4. Marked activity.
5. Generalized tuberculosis.
6. Hemoptysis (until two or three weeks after stopped).

*Mayer*, Edgar, has to say about *contra-indications*:

"It is highly probable that, in most forms of progressive acute tuberculosis, light therapy is not indicated. In my experience, intestinal tuberculosis is an exception. In this complication at times, even when progressively active, mercury quartz light has proved of great value."

*Roland Davidson*, Tucson, Ariz., 1928, said in discussion of a paper on heliotherapy by Dr. Howson, that "At the Desert Sanatorium we no longer admit patients with the open form of pulmonary tuberculosis for we found only a small number of patients with this type of tuberculosis benefit by treatment with solar radiation at this particular place, though most careful supervision was exercised, and care taken to prevent excessive radiation."

*Untoward Symptoms Given by LoGrasso and Balderry*:

1. Hemoptysis—

Jacquerod who has discontinued the use of heliotherapy in pulmonary tuberculosis, found this complication occurring.

Bacmeister attributes its occurrence to radiations.

Pottenger, Holmboe and Morin hold that



heliotherapy does not produce hemoptysis. Morin observes that in those with previous histories of hemorrhage it did not recur with exposure to light.

2. An increase in the activity of the lesion or the reactivation of one which has been arrested, has been observed by Jacquero and Bacmeister.

3. Temperature and pulse rate have often been found to rise sharply.

4. Headache, insomnia, palpitation, anemia, anorexia, and hysteria have also been mentioned.

Many use Rollier's technique or a modification of it in giving solar radiation. He states that heliotherapy must be applied to the whole surface of the skin always having it as a decongestive agent. This decongestion is accomplished by beginning and ending the general exposure with the lower extremities, whatever the seat of the lesion under treatment. This allows one to gain information regarding the patient's degree of tolerance upon these "neutral" parts and to induce in them a call for blood, whose action involves in turn a decongestion both of the bone and joint foci, and of the abdominal and even the thoracic viscera.

"Heliotherapy must then be administered progressively in short exposures, with the object of accustoming the skin and producing the pigmentation indispensable for the skin's defensive functions, while avoiding solar erythema and its troublesome consequences. This procedure must be modified according to the state of resistance of the patient and the reaction observed. The patient's subjective sensations ought always to be taken into consideration and the rational application of the sun-bath should produce a sensation of well being—never fatigue or lassitude.

"After the lower part of the body has become well pigmented and the patient has been carried on a period occupying from a few weeks to three or four months, the chest (this in cases of surgical tuberculosis complicated with pulmonary tuberculosis) in turn is uncovered. It is necessary to proceed minute by minute, exposing alternately the front and back; exposures should be separated by an interval of rest in the shade.

"Prudence pushed to an extreme renders accidents exceptional. Commencing pigmentation on the skin of the chest marks the most critical period. There is

no object in exposing to general solar radiation more than one and one-half hours to two hours daily."

Do not take sun-baths one hour before nor until two hours after a heavy meal. In this climate in mid-summer the early morning and later afternoon sun are used as it is usually too hot between 10:00 A.M. and 3:00 P.M.

*Roland Davidson* has to say about exposure of the chest of those having pulmonary tuberculosis: "Our clinical experience does not justify covering the chest of patients with pulmonary disease. Unquestionably a greater effect is obtained from a fractional dosage than is obtained from a single long exposure although the reason for this difference has not definitely been shown."

*Howson* writes: "When definite evidence of tanning is seen then, and not until then, the chest may be cautiously exposed, beginning with one minute daily until the time of exposure equals that of the rest of the body, the exposure time of which has not in the meantime been increased.

"Any patient who feels worse after a bath than before has had too much sun. The use of artificial light is reserved for the days on which it is not possible to use the sun."

*Coblentz* says that the general dosage procedure is empirical, based on the attending physician's general experience, and on the reaction of the particular patient undergoing treatment.

*Gauvain* says: "Sun treatment is not mere exposure to the sun. The technique requires skill, care and gradual application."

*Herve' and Roussel*, using Rollier's technique, practiced systematically the sun cure of patients having pulmonary tuberculosis in their sanatorium, conclude: "Heliotherapy only disappoints those who do not give enough attention to it."

Most patients, before receiving the first sun-bath, need to be inured to out-of-door life. This is accomplished by giving the air-bath out on an open porch where the patient is protected from the sun and cold wind. As a simple method one may use the same procedure as used for taking the sun-bath, adjusting the time of exposure according to the reaction of the patient.

Before starting the air-baths and sun-baths the temperature, pulse, and blood

pressure should be taken; a blood count and urinalysis together with the usual physical examination, x-ray picture and other laboratory procedures should be done. There should be protection against cold wind, not ever allowing the patient to become chilled.

The head is protected from the sun by means of some covering which will reflect, not absorb, the light. Some white material made into a covering for the head such as a white linen hat is favorably mentioned for this purpose.

LoGrasso of Perrysburg, New York, gives as their modification of Rollier's technique of sun-baths the following:

*"First Day:* The patient, reclining on a bed and dressed only in trunks and with head and eyes protected, is taken to the sun porch where neither glass nor screen comes between the patient and the sun. His body is covered with sheets or blankets down to the feet, which are exposed and irradiated for periods of five minutes three times during the day with intervals of about an hour.

*"Second Day:* Each insolation period of the feet is increased to ten minutes, and during the last five minutes of each period the sheets are drawn back to the knees, thus giving the feet ten minutes and the legs from ankle to knee three five minute exposures.

*"Third Day:* The feet are irradiated for fifteen minutes at each period. The insolation time of the part from ankle to knee is increased to ten minutes, and during the last five minutes the thighs are exposed and insulated.

*"Fourth Day:* Each of the three insolation periods is as follows: feet, 20 minutes; ankles to knees, 15 minutes; thighs, 10 minutes; abdomen, 5 minutes.

*"Fifth Day:* Each insolation period of each part previously irradiated is increased by five minutes, and the chest receives its initial exposure of five minutes each period.

"This daily increase in the length of the irradiation periods is kept up until on the twelfth day the longest-exposed part receives a total of three hours, the exposure periods being: for the feet, 60 minutes; ankles to knees, 55 minutes; thighs, 50 minutes; abdomen, 45 minutes, and chest, 40 minutes. From this day on to the sixteenth, the insolation period of the feet remains 60 minutes, while that of the oth-

er parts keeps increasing at the same rate until the 60-minute limit is reached by each one in turn.

"On the seventeenth day the change is made from three 60-minute periods to two 90-minute periods, one in the morning and one in the afternoon. The anterior and posterior surfaces should, if possible, receive the same amount of irradiation, the total exposure being divided equally between the two surfaces. The arms are exposed along with the rest of the body, allowing them to lie along the side of the body."

Here at the Eastern Oklahoma Tuberculosis Sanatorium we have obtained favorable results from heliotherapy. This spring some sixty children were started on solar irradiation, some of whom had irradiation with the mercury vapor lamp during the winter months. Also some of the adults are using this form of treatment. As for specific results it is of course too early to give any reliable data.

This form of treatment has a most beneficial psychic effect on those using it. The patients using solar irradiation have a more hopeful outlook on life, which, as all those working with tuberculous patients know, is a great factor in obtaining an arrest of their disease.

Supervision of patients taking the sun-bath or those receiving artificial heliotherapy should be done by the physician himself and not left to a nurse or attendant.

Samuel H. Watson has prepared a sun chart for use of patients taking heliotherapy which takes into account the untoward as well as the beneficial effects resulting from each sun-bath. In case untoward symptoms occur in spite of the conscientious supervision of the physician the irradiation should be discontinued for a few days. When again started the time of exposure is never as much as it was before the irradiation was stopped, but is started at say about half as much, and then more cautiously increase the time of exposure to that tolerated by that particular patient.

#### SUMMARY

1. The history of heliotherapy is interesting, going back as far as Inknoton, 3,000 B. C.

2. Mechanical apparatuses used for artificial heliotherapy have been developed into effective appliances to be used alone or in conjunction with solar irradiation.

3. The physics of light has given to us



the physical components which go to make up the visible and invisible parts of the spectrum, leaving only a small segment not worked out.

4. The invisible part of the spectrum, especially the ultra-violet rays, is that part to which is attributed mainly the therapeutic results obtained in heliotherapy.

5. The rays are measured in units: Angstroms, millimicrons, and microns.

6. The physiological effects have not been definitely proved; an attempt has been made in the Cholesterol, the Dixon, the Nerve Stimulation, and the Direct Absorption "theories".

7. The general action resulting from the use of heliotherapy includes that of warmth, well being, exhilaration, buoyancy, mental activity enhanced, and other more specific effects.

8. The indications for heliotherapy vary according to the views of the different ones giving their opinions. The contra-indications follow the same trend.

9. Most authors think irradiation is indicated in childhood type of pulmonary tuberculosis, glandular, intestinal, laryngeal, fibroid type of pulmonary tuberculosis while inactive, pleural type, and tuberculous empyema.

10. In general, the majority of workers among the tuberculous seem to agree on the contra-indications as follows: Active progressive disease, exudative pulmonary processes, cases showing marked toxic manifestations, marked debilitation, hyperthyroidism, arteriosclerosis, heart disease of any moment, high fever, and hemoptysis (for some time after cessation).

11. Modifications of the principles of Rollier's technique are used by most workers using heliotherapy. It is, briefly, use of prudence, gradual exposure of the body first to air and then to sun, the rapidity of progress in exposure depending upon the subjective and objective reactions of each individual patient, having always the head covered, and protection from chilliness.

12. Exposure of the chest to irritations in pulmonary tuberculosis is done but the conservative physicians do it very slowly and after the rest of the body has become well pigmented.

13. Heliotherapy treatment should be directly supervised by the physician himself, remembering that Gauvain says, "Sun

treatment is not mere exposure to the sun. The technique requires skill, care, and gradual application."

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# CHRONIC HYDROCEPHALUS FOLLOWING AMPUTATION OF MENINGOCELE: OBSERVATIONS TWELVE YEARS AFTER OPERATION

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It is well known through experience that congenital hydrocephalus occurs frequently in conjunction with other developmental anomalies, especially spina bifida, meningocele and meningo-encephalocele or meningo-myelocele. The presence of manifest or potential hydrocephalus in conjunction with meningocele is of such high incidence (the latter seeming to serve a decompressing function), that the removal of a meningocele has long been known to be attended by a danger of death from acute hydrocephalus almost as grave as the hazard implicit in a persistent meningocele.

The following case is presented because of the unusually long survival period following simple amputation of a meningocele, and because the hydrocephalus which followed this amputation is accompanied by an interesting clinical syndrome whose chief features are endocrinopathy, epilepsy, and an absence of evident intellectual defect:

S. P. K., a female, was born May 7, 1922. The child's mother had had two miscarriages and a third child lived only 36 hours. The patient was born at term of the fourth pregnancy. The mother was 32, in good health. The father was 39, in good health. Immediately after birth a protuberance in the occipital region was observed and a neurologic consultation requested. Dr. Karl A. Menninger saw the patient at 6 hours and described the sac as of small hen's egg size, attached by a small pedicle just below the occipital protuberance. As nearly as the examiner could judge, the meningocele emerged between the

atlas and axis. There was no bony deformity. The sac was covered by skin which was hairless except in a few spots, and it was eroded superficially where it joined the skin over the occipital region. Pressure on the head or fontanelles caused dilation of the meningocele. Pressure on the sac caused the child to cry. Removal of the sac was advised, and this was executed by Drs. W. M. Mills and M. Sloo of Topeka on May 8, 1922, when the child was 32 hours old. (See Fig. 1 for sac.) No unusual enlargement of the head is mentioned in the original description.

A note from the family physician states that the baby did very well for one week after leaving the hospital. At the age of 3 weeks the child began to cry and cried continuously for 36 hours. She developed a marked strabismus (type not mentioned) and her hands and feet jerked. (The physician notes "no definite convulsion".) There was no vomiting. Circumference of the head at this time was  $15\frac{3}{4}$  inches. The child became quiet under bromide medication.

A note from the surgeon in response to a letter of October 1, 1924, stated that the "baby is progressing well but has a moderate hydrocephalus". From this time the patient was not under frequent medical observation (to our knowledge) until her tenth year. It is known, however, that her tonsils were removed when she was three years old. She entered school at the usual age and did excellent work, securing "A's" consistently in all subjects except arithmetic. She was disinclined to play with other children and was spoiled by her excessively solicitous mother. It was learned later that the child's head ceased to grow perceptibly after her second year.

On February 23, 1932, at the age of  $9\frac{1}{2}$  years, the patient was referred to the Menninger Clinic by Dr. T. A. O'Connor of Topeka. About five weeks before, the child had suddenly ceased to play and placed her hand on her stomach, staring into space. She then tried to vomit. In a few minutes she felt "fine" and resumed her play. Similar attacks recurred a few times a day, occasionally following an interval of two to three days. On February 7th the patient became ill with influenza and she had a generalized clonic convulsion the same evening. Major convulsions did not recur but the patient continued to have petit mal spells almost daily. There was no history of headache except one following influenza, and there were no other subjective complaints. It was observed by the mother that the child's breasts were overdeveloped and asymmetrical and that pubic hair was beginning to appear.

**Physical Examination:** The child was 4 feet  $9\frac{3}{8}$  inches in height. She was distinctly obese, her weight being 109 pounds (overweight 25 pounds). The adipose tissue was most evident about the pelvic girdle. Her head was of typical hydrocephalic configuration, the circumference  $24\frac{1}{4}$  inches. An old occipital  $24\frac{1}{2}$  inches operative scar was present. There was a

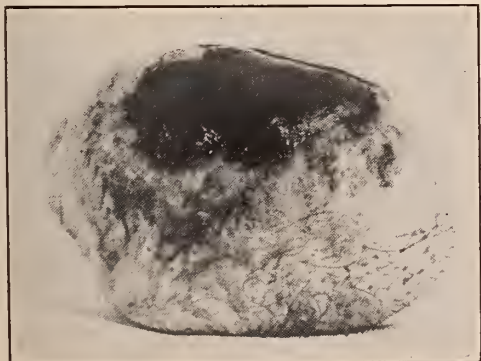


FIGURE 1.



suggestion of exophthalmic stare. Joints were hypotonic. Fingers tapered markedly. There was a distinct genu valgum. The breasts were excessively well developed, the right larger than the left, and there was a moderate amount of hair on the mons veneris.

**Neurological Examination:** A slight left external rectus weakness was evident, and the right naso-labial fold was shallower than the left. Gait was broad-based with difficulty in walking a straight line. The Romberg was positive. All deep reflexes were hyperactive.

**Laboratory:** Hemaglobin 83%, red blood count 4,620,000, white blood count 9,000; neutrophils 72%; small lymphocytes 22%; large lymphocytes 3%; eosinophiles 2%; transitionals 1%. Blood Wassermann negative. Urine negative. Mother's blood Wassermann negative.

patient's petit mal seizures, her obvious obesity and other manifestations of endocrinopathy were made the objects of therapeutic attacks. Small doses of luminal were administered, a "reducing" diet was ordered, and fluid intake was restricted to one pint a day. In addition the child began to receive small increasing doses of whole gland pituitary extract subcutaneously. The effect of this treatment was at first dramatic. After two months of treatment the child entered a period of about seven months during which she was entirely free from "spells". When the medication was discontinued the effect was carried over for a month, but the attacks then returned. The treatment was reinstated but the child continued to have petit mal attacks, irregularly every three to ten days regardless of variation in the dosage. Whether an inhibitory factor arose in response to the medication

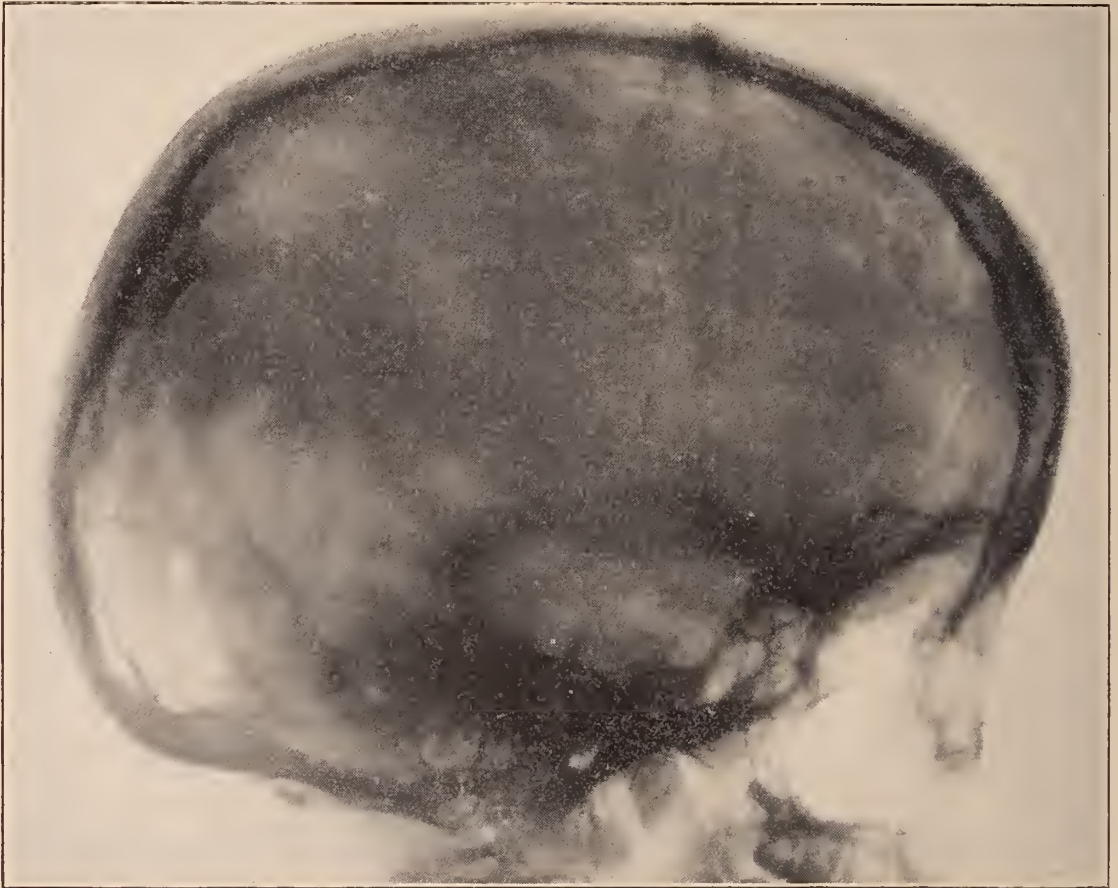


FIGURE II.

**X-Ray:** (See Fig 2) Head, lateral view, right side to film, skull markedly larger and thicker than normal. Marked osteoporosis of frontal and parietal regions. Marked irregularity in density of bone shadow in occipital region and also just above base line of skull. (Pressure digitations.) Shadow of blood vessel in frontal region unusually prominent. Sella turcica shallow but not occluded. Posterior clinoid process inclined anteriorly. Mastoid cells clear. Frontal sinus very shallow. Numerous tooth buds visible. The spinous processes of the first two cervical vertebrae are apparently bifid.

At this time it was felt that the hydrocephalus was sufficiently well "compensated" to exclude the consideration of a radical attack on this problem. The

at this time or the persistent seizures were due to laxity in diet and fluid consumption, cannot of course be stated with certainty. This treatment was discontinued on November 15, 1933. The remainder of the regimen was continued as before with the addition of a diuretic in the form of ammonium chloride.

The child's neurological status was reviewed from time to time. On February 20, 1933, the findings were as follows: The margins of the left optic disk were slightly hazy, but there was no elevation. Visual acuity was severely diminished on the left. A slight degree of external rectus weakness was present bilaterally, more severe on the left. There was some flattening of the right lower face. Gait was broad-based and there were slight bilateral disturbances of

coordination, more marked on the right. Tendon reflexes were increased in the right upper extremity and left lower extremity. There was exhaustible right ankle clonus. The findings have fluctuated in intensity from time to time but no essential persistent change has occurred up to the present.

On January 6, 1934, the child's mother gave her camphorated oil by mistake instead of castor oil. Her cheeks were flushed and her temperature slightly elevated. There were no other ill effects. She was admitted to the sanitarium for 24 hours and eliminative therapy was given resulting in the disappearance of her symptoms. The incidence of the child's spells had not changed since her last visit.

In March, 1934, the patient contracted whooping cough which lasted until the end of April. In the latter part of May she began to have attacks almost every day, preceded by a cry but unattended by convulsive movements or falling. Her mother had discontinued the administration of the diuretic but had continued to give her luminal. She was brought to the clinic at our request on August 9, 1934. No objective change was discerned except that the child seemed worn out by the intense and persistent heat of the summer. The x-ray of the skull was identical with that made over two years before. Despite her petit mal seizures and the attack of whooping cough she had been promoted in school. At this time a ketogenic diet and the resumption of endocrine therapy were proposed. The parents refused consent for lumbar puncture or ventriculography, but consented to consider the former.

(Later additional data: 12/27/34. BMR-25. Glucose tolerance: Fasting 105. One-half hour 268. One hour 286. Two hours 182. Three hours 115. 2/23/35: BMR-27%. Following this determination the patient began to receive small increasing doses of dried thyroid gland.)

#### DISCUSSION

Certain interesting features which this case presents may now be discussed separately.

1. *The operation and its complications:* Regardless of the type of meningocele the amputation of such a lesion is always fraught with grave danger. If the child does not die of shock, cerebrospinal fluid leakage, or meningitis, death often results from acute hydrocephalus. Cutler<sup>1</sup> and Penfield and Cone<sup>2</sup> mention the fact that Milton in 1892 observed the frequent association of spina bifida with hydrocephalus and warned against the use of the "knife" for meningocele. It is a matter of clinical observation that the meningocele acts as a safety valve for the hydrocephalus, and increased intracranial pressure has even been included among the possible primary causes of the meningoceles and related herniations. (See Cutler<sup>1</sup> and Babonneix<sup>3</sup>.) Regarding the classical procedure of simple amputation, the opinions of surgeons of experience vary considerably as to the indications, the hazards, and the optimum time for operation. (Cutler<sup>1</sup> and Penfield and Cone<sup>2</sup>), although all agree that the operation must be under-

taken if the condition of the sac is such that rupture or infection are threatened.

Cutler<sup>1</sup>, who made a careful statistical analysis of 39 cases, came to a pessimistic conclusion regarding the efficacy of operation, feeling that the operation attacked an effect rather than its cause, and Bailey, in discussing this paper, felt that the operation was irrational, that the hydrocephalus should be attacked first, unless the condition of the meningocele made operation imperative. In response to increasing awareness of the inadequacy of the usual operative procedures, Penfield and Cone<sup>2</sup> devised an operation which took into account the necessity for preserving the absorptive function of the meningocele sac. They demonstrated this by histologic and experimental methods, showing the similarity of the sac tissue to the arachnoid villi in the cranial meninges. The operation consisted essentially of the evacuation of the sac which was, however, preserved and collapsed beneath a fascial tent. The mechanical decompressive function of the sac is, of course, lost, but the authors report excellent results, and the operation may prove to be an escape from the hazards of the older procedures.

Gross and Sachs<sup>4</sup>, after reviewing their large experience, have recently questioned the justification for the pessimistic attitude toward the amputation procedure, when careful indications are followed and preoperative treatment for ulcerated sacs is employed. They do not feel that the incidence of hydrocephalus is related to the type of closure employed.

In view of the hazards involved, the long survival period of this patient (twelve years at present) must be emphasized. The operation was a simple amputation performed in one stage, and the child did develop an acute hydrocephalus following the operation, manifested by jerking of the extremities, acute extra-ocular muscle weakness, and subsequent enlargement of her head. That some compensatory mechanism supervened is indicated by the cessation of growth of the head and the child's freedom from striking symptoms for many years. Whether a proportionate decrease in the secretion of cerebrospinal fluid or the partial penetration of an original obstruction in the cerebral subarachnoid space occurred cannot be said. The latter would be the hypothesis most compatible with Dandy's<sup>5</sup> theory of the cause of "so-called idiopathic hydrocephalus". It is true that hydrocephalics may



live on to senility in some instances, but these are rarely patients who have had striking manifestations of acutely increased intracranial pressure early in life. We do not know what has been the longest survival period in a case of hydrocephalus following removal of a meningocele. Fulcher<sup>6</sup> stresses the exceptional nature of prolonged survival after such operations in recording the survival of an infant a few months after the single stage amputation of a suboccipital meningocele.

2. *The onset of epilepsy:* Convulsive seizures are frequently associated with hydrocephalus, as they are with Little's disease and other congenital disturbances. One might generalize to the extent of saying that they are common in any condition where cortical inhibitory control is vitiated, whether the mechanism be increased intracranial pressure or a cerebral degenerative process. The convulsive seizure may be delayed in their appearance until long after the primary disease manifests itself. This patient suffered a petit mal seizure in her tenth year following the onset of hydrocephalus. It is possible that a low grade infectious process reactivated her hydrocephalus. If this were true it would still remain unsettled whether the infection caused increased choroid plexus transudation, further adhesions in the arachnoid, or both. It is noteworthy that the child's second major convulsion occurred with a manifest "influenza" and that her last exacerbation followed whooping cough. One can only speculate as to whether or not there is a "diencephalic" element in this child's petit mal spells, a possibility suggested by their original visceral nature and the apparent although short-lived response to endocrine therapy. In the last year or more the attacks have taken the form of brief accessions of dizziness and more recently they have been preceded by an involuntary cry.

3. *The endocrinopathy:* The child exhibited precocious development of her breasts and pubic hair, both being apparent to a medical examiner before the completion of her tenth year. (Figure III, a recent photograph, exhibits the over-development and asymmetry of the breasts, which have not grown perceptibly the last two or three years.) Both phenomena had been noted by her mother some time before examination. In addition, there were pudgy hypotonic hands with tapering fingers and a conspicuous obesity. The child has not menstruated to date. While endocrinopathies associated with chronic hy-



FIGURE III.

drocephalus are not widely appreciated, they have been described frequently in the literature. Oppenheim<sup>7</sup> in his textbook mentions the premature appearance of menses and puberty in hydrocephalus, observed by Bourneville-Noir. Pollock<sup>8</sup> described hypopituitarism associated with hydrocephalus. In an interesting postmortem specimen he could not ascribe the clinical syndrome exclusively to the pituitary because the pineal body was also compromised. This author also mentioned the clinical observations of endocrinopathy with hydrocephalus by many earlier neurologists, including changes in the sella turcica. Cushing<sup>9</sup> described several endocrine syndromes mostly in connection with obstructive hydrocephalus, including a case of acromegaly. He stated that the paradoxical combination of obesity with genital hyperplasia is possible although not common and remarked on the frequency of adiposity and other vegetative disturbances in young hydrocephalics. Cushing found evidences of direct pressure on the pituitary body in his cases but thought that obstruction to the circulation of pituitrin in the cerebrospinal fluid was also a factor. Babonneix<sup>2</sup>, Babonneix and Denoyelle<sup>10</sup>, and Bonnet, Babonneix and Carrette<sup>11</sup> present cases

of mixed metabolic and growth disorders with hydrocephalus, and discuss the mechanisms involved. Babonneix and Denoyelle<sup>12</sup> favor the hypothesis that the endocrinopathic phenomena are due to involvement of the tuber cinereum and infundibulum, and cite instances in which the hypophysis was normal at necropsy. It is obvious that either mechanism might be invoked by the conspicuous stretching of the floor of the third ventricle, especially in the tuber region. These authors also seek to explain the frequent non-occurrence of adiposity or similar disturbance by the absence of dilatation of the third ventricle, for instance in those cases where the foramina of Monro are blocked, causing dilatation of the lateral ventricles alone. Besta<sup>13</sup> describes three interesting clinical syndromes in adults, including sexual infantilism, hypersomnia, and psychosis, with definite x-ray evidences of hydrocephalus, cured by radiotherapy. Cardenas<sup>14</sup> describes two cases of precocious genital development in children with hydrocephalus. Many other instances may be found in the literature, but these suffice to indicate the variety of hypophyseal, tubero-infundibular, and (questionably) pineal syndromes which may be associated with hydrocephalus and are in all probability due to it. It is possible that many obscure endocrinopathies would be found on closer scrutiny to be due to low grade hydrocephalus.

4. *The patient's mental state:* The association of hydrocephalus with mental inferiority or progressive mental deterioration is very well known. This association, however, is not always the case. Oppenheim<sup>7</sup> states that there are not a few cases in which the intelligence is normal and mentions that in mild forms the disease may be associated with exceptional ability, especially artistic ability (quoting Perls). Wechsler<sup>15</sup> states that the mentality is sometimes normal and rarely, with mild degrees of hydrocephalus, even supernormal. Babonneix mentions as probable "frustrate" hydrocephalics the physicist and physician, Helmholtz, the pianist, Rubinstein, and the poet, Verlaine. It is perhaps more rational to assume that intellectual superiority occurs in these cases in spite of increased intracranial pressure rather than because of it. However, our knowledge of psychophysiology is still so scanty that we cannot be certain that the milder degrees of pressure may not in some instances have a stimulating effect on some cortical functions.

This child had always impressed everyone who had contact with her as "precocious". She was alert, cooperative, and her vocabulary was large. She seemed to have an unusual degree of insight into her troubles and to be genuinely philosophical about them. Her progress was satisfactory in a parochial school. When last seen at the clinic she had been promoted to the seventh grade with an average of "90", and had been awarded a prize for excellence in catechism. At this time a psychometric test was performed with the following results (Stanford Revision of Binet-Simon): Age 12 3/4 years; mental age 11 1/2 years. Comments: Attention good. Interest well sustained. Vocabulary good. Calculation fair. Reasoning slightly defective. Association somewhat slow. Level about average. The performance tests were all poorly executed. The quantitative test thus failed to substantiate a clinical impression. However, the child remains unusually alert and capable, despite her severe organic burden, and she does have a remarkably well developed faculty of speech. Her memory, too, is superior. It is probably on the basis of these superior capacities that she is able to get along so well.

*Summary:* A case of chronic hydrocephalus following amputation of a suboccipital meningocele at the age of 32 hours is presented. The findings and course twelve years after operation are described. The case presents an unusual survival period, a definite endocrinopathy, a petit mal epileptic syndrome, and satisfactory preservation of intelligence. These features are discussed separately.

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## WHAT THE PUBLIC THINKS OF DOCTORS\*

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REV. SIDNEY H. BABCOCK, D.D.  
HOLDENVILLE

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It is a large order my good friend and our genial toastmaster, Dr. Butts, has given me, to interpret the public mind as it relates to doctors schooled in the art of healing. It has been nearly 58 years since I first looked into the face of a kindly physician. Throughout these years that have followed my work as a minister I have been given an opportunity to observe, in much more than a superficial way, the work of doctors, and to ascertain the public mind as to them.

The public mind is sensitive. Every act of every profession reacts upon it. Moreover, the public mind is vacillating. What it thinks today, it may, or may not, think tomorrow. Its judgments today may be overturned by the facts of tomorrow. Popular opinions, sympathetic or unsympathetic, are not always true opinions. The public mind changes with the shifting scenes.

Nevertheless, the public mind is positive and persistent. There are positive opinions which carry through the years and certain public judgments which persist from one generation to another. Whether you agree with me, or not, that the soul persists after death, you will probably agree with me that there are certain positive judgments of the public mind that persist from one generation to another.

However that may be, it is to the persistent public opinion of doctors that I shall now address myself.

The public persists in giving to your profession a very high rank, perhaps the very highest rank. It places the art of healing and the art of disease prevention

among the noblest of all arts. This it has done despite the fact that here and there on the horizon there have appeared quasi-scientific and quasi-religious cults that have sought to discount the medical profession.

The public mind gives to the doctors and their families a place in the best social circles. They always have an entree into the best homes and the best circles of society despite the fact that they must frequently be found in the worst and most degraded parts of a community.

The public gives to doctors the high honor of guardians of the public health. In this the doctor has a dual relation. He must make his livelihood by attacking and destroying the causes of the very diseases which call for his services which in turn provide his livelihood. The Great Physician said one time, "A house divided against itself shall fall," but He also said, "Whosoever shall lose his life shall preserve it." The great fight the doctors have made, and are constantly making, to conquer disease has greatly endeared them in the public mind.

Hippocrates, lifting the mind out of primitive superstitions and pioneering the way to the reasonable healing power of nature; Herophilus, father of anatomy, introducing to humanity the brain and nerve centers; Erasistratus, early pneumistic investigator, pointing the way to the intimate relation of mind and body; Disocorides, army surgeon under Nero, laying the foundation for modern pharmacopoeia and sanitation; Celsus, leaving behind him his monumental work, *De re Medica*; Boerhaave, introducing clinical instruction and with Von Haller lifting physiology into newer and finer interpretations; Steph-

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\*Delivered at the annual meeting of the Hughes County Medical Society, Holdenville, Oklahoma, February 8, 1935.

en Hales, the country parson and doctor, discovering the dynamics of the circulation of the blood; Galvani, extending the knowledge of electric phenomena to the human body; Morgagni, Italian pathological anatomist taking time amidst his busy practice to write his great work on the "Seats and Causes of Disease"; the immortal Pasteur, revolutionizing the whole theory of medicine and therapeutics by his discovery of living ferment-micro organism which so powerfully affects the whole human process; Sir Humphrey Davy, Faraday, Goldman, James Jackson, pioneers in anaesthesia preparing the way for Dr. Crawford Long to perform the first painless operation under ether at Jefferson, Ga., March 30, 1842; Reed and his noble assistants giving their very lives to stamp out forever the dread scourge of yellow fever; these all, and thousands of others, which might be mentioned if time permitted, together with thousands of illustrious names of our modern world have valiantly fought the battle for public health.

The fine way in which our modern doctors spare neither time nor expense to bring to our communities the best medical thought, the best preventative measures, and, when necessary, the best curative and surgical skill fully justifies the public mind in giving to them the high place in our society that it certainly does.

Then, at last, when the twilight shadows gather and we catch glimpses of gold on the other shore, the doctor still watchful, still faithful, becomes more than a skilled scientist, more than an honored servant of the community, more than a valiant guardian of the public health—now he is "a friend that sticketh closer than a brother."

#### NONUNION IN FRACTURE OF SHAFT OF HUMERUS: REPORT OF FIVE CASES

James Warren Sever, Boston (Journal A. M. A., Feb. 2, 1935), is of the opinion that delayed union and nonunion occur more often in the middle third of the shaft of the humerus after transverse fracture than in any other long bone. Spiral fractures that involve this region may be slow to unite, but so far he has known of no nonunions, or pseudoarthroses. Of the five cases that he reports, three occurred in his practice and two are the misfortunes of others. He believes that one should report failures as well as successes and that there must be some intrinsic cause for nonunion in fractures of the humerus that is not wholly understood. Trauma, from the accident itself, may so destroy the power of bone repair that union is delayed or prevented. Interference with the blood supply through the tearing of the nutrient artery may be another factor. Lack of adequate fixation, which is of the greatest importance, is another

probable cause; and in the operative repair, primary internal as well as secondary external fixation is essential for a long period. However, it is practically impossible to immobilize the humerus completely in any type of external apparatus. In spite of an adequate consideration of all these factors, recurrent nonunion may, and does, occur in a certain percentage of cases. Lack of callus formation and interposition of tissue are often factors that must be considered. After his experience in the reported cases, the author believes that the only operation probably worth doing is that advocated by Campbell and Henderson; namely, the massive or onlay graft, followed by a sufficiently long period of fixation to ensure union and to carry one by the period of absorption and possible fracture of the graft. Even this operative procedure is, however, not infallible.

#### RECTAL GONORRHEA IN WOMEN

Clement L. Martin, Chicago (Journal A. M. A., Jan. 19, 1935), points out the fact that rectal gonorrhea, especially in women, is a more frequent complication of genital gonorrhea than is generally known. The chief reason why it is regarded as rare is that it is often overlooked. The conception that the infection usually causes a severe rectal inflammation is not true; anal ulcer, rhagades or condylomas are not common concomitants. Perhaps too many students and physicians have obtained their present notions of rectal gonorrhea from the free clinic or hospital dispensary, where negroes are treated and where proctitis obliterans patients are seen and the probable relation of gonorrhea to the stricture has been stressed. In 111 cases, three presented superficial fissures; perianal suppurative disease was found in three cases; two presented fistulas and one a short sinus communicating with an inflamed fibrosed crypt. In four patients the mucosa of the terminal rectum had a nodular surface; i. e., the early polypoid change that results from chronic mucosal infection. Superficial erosions, in small spots from 1 to 2 mm. in diameter were observed, on the mucosa just above its junction with the skin in four instances. No rectal or anal ulcers were encountered. Although a number of these cases were examined with the proctoscope very early in the course of their genital and rectal infections, the very severe cases described by some writers were not observed. Some of the women had much discomfort, especially at defecation, but not many, and the ano-rectal inflammation was not uniformly proportionate to the complaint of the patients. Stuhmer has described four phases of the disease. Only the last two usually are seen. In the first phase the mucosa is swollen and fiery red, the mucosal folds are obliterated, the lumen is quite filled with swollen mucosa, and the central orifice is square, irregular or arch shaped. The mucosa bleeds easily and on it there is greenish yellow mucopus. The anus is reddened and very sore. In the second phase the swollen redundant mucosa recedes, the normally arched lumen reappears, the redness lessens, seedlike swellings, the color of the adjacent mucosa are seen, the pus becomes thicker and does not adhere to the wall, and inflammation still is present in the anus. The third phase appears after one or two days; this is the proctoscopic picture commonly seen. There is considerable swelling and redness of the mucosa; the seeded appearance still is generally present, and thread-like pus is noted, which is quite adherent to the intestinal wall. The fourth phase is characterized by the persistence of pus on the normal mucosa. Routine rectal smears should be made of all women who exhibit a gonococcic infection of the urethra or the cervix.



## PRESIDENT'S PAGE

Statement by LeRoy Long, M.D., representing Oklahoma State Medical Association, about Basic Science Bill now before Public Health Committee, State Senate.\*

1. Knowledge of the basic sciences enumerated in the bill is necessary in connection with the practice of any one of the healing arts because without such knowledge there is no stable foundation.

Knowledge of human anatomy is knowledge of facts about the structure of the human body. These facts are so fundamental that every healing art based upon even the semblance of scientific procedure must adapt itself to them.

Knowledge of physiology and of physiological chemistry is the foundation upon which many important advancements rest. For example, diabetes is now controlled by procedures based upon such knowledge. Pernicious anemia is under control in the same way. These are cited as comparatively recent conquests, and there are many other examples.

Knowledge of bacteriology is of inestimable importance because 50 per cent of diseases are due to infection by disease producing germs called bacteria. The protection of the people of the world against terrible scourges, like bubonic plague, cholera, typhus fever, is made possible only through knowledge of bacteriology. Typhoid fever is prevented in the same way. Surgical infections are prevented and controlled by procedures based upon knowledge of bacteriology. Application of knowledge gained from the study of bacteriology makes it possible for the United States Public Health Service and our own State Department of Health to prevent epidemics and safe-guard the health of the people.

2. There is nothing mysterious about science which means simply knowledge of facts. That being true, it is reasonable to conclude that any objection to this bill is predicated upon a lack of desire to be acquainted with facts, or upon inability to show a comprehensive understanding of facts that are of fundamental importance in the investigation and treatment of diseases and abnormalities of human beings.

3. The bill is fair to all concerned. It provides for a board of five members who hold teaching positions on the faculty of the State University, the State Agricul-

tural College, or some other State institution of learning in the State of Oklahoma, to be chosen because of their knowledge of the basic sciences indicated. The bill does not provide that they or any of them shall be members of any group or profession engaged in the healing arts. That being true, any of the said groups or professions could be represented on the board when and if they have among them those who are able to qualify under the terms of the bill—that is, those who have a knowledge of the basic sciences to the extent that they can or will be able to secure teaching positions in such sciences in the institutions named in the bill.

4. The motive behind this bill is to increase the efficiency of those engaged in the practice of the healing arts. It does not strike at anything except ignorance and inefficiency, regardless of where or in what group ignorance and inefficiency may be found. Right-thinking people believe in increasing the efficiency of those who serve them in connection with such vital questions as the preservation of health and prevention and cure of diseases and abnormalities. The people of the State of Oklahoma are right-thinking people. They expect and deserve proper recognition and proper protection.

5. In sum, the provisions of the bill are for the best interests of the citizens of the State of Oklahoma. It is not proposed in the interest of any profession, any sect or any group. No profession, no sect, no group is mentioned in the bill. Any profession, any sect, any group practicing the healing arts can, under the provisions of the bill, be represented on the Basic Science Board when and if such representatives can qualify as instructors in any one of the basic sciences taught in the University of Oklahoma, the State Agricultural College, or some other State institution of learning in the State of Oklahoma. The bill provides that no member of the board shall be actively engaged in the practice of the healing art or any branch thereof. We submit that it is fair to all concerned. We submit that any objection to the bill must be construed as either disbelief in the basic sciences, or a confession of inability on the part of the objectors.

\*Filed with Committee on Public Health, State Senate, Oklahoma City, March 26, 1935.

# THE JOURNAL

OF THE

## Oklahoma State Medical Association

Issued Monthly at McAlester, Oklahoma, under  
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No. 4

DR. L. S. WILLOUR.....Editor-in-Chief  
McAlester, Oklahoma.

DR. P. P. NESBITT.....Associate Editor  
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Reprints of original articles will be supplied at actual cost provided requests for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, 203 Ainsworth Building, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

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### EDITORIAL

#### THE 1935 ANNUAL MEETING

The annual meeting at Oklahoma City, May 13, 14, 15, promises to be one of the most interesting and enjoyable in the history of our association.

The meeting will be housed in the Skirvin Hotel; all general and sectional meetings together; the scientific and commercial exhibits and entertainment features being held in this one building. It will not be necessary for you to leave the hotel in order to attend any part of the program—perhaps we will be obliged to make a single exception of the golf tournament.

We have a list of guest speakers that everyone will be anxious to hear; their

names, with the subject of their discussions, you will see in a brief outline of the program published in this issue.

Entertainment for the doctors and their ladies has been arranged so that there will be no time when you are not either being entertained or edified.

There is a great deal of important work for the Council and House of Delegates and it is most urgent that members of these bodies be prompt at the meetings as it is not fair to waste the other fellow's time by making him wait for you.

Word received from the President of the Women's Auxiliary indicates that a very interesting program is being arranged and it is sincerely hoped that this part of the program will be liberally attended for the physicians of this state realize the assistance that is being rendered organized medicine in Oklahoma by the wives of the members.

As you look over the committee appointments made by Dr. Henry H. Turner, the General Chairman, you can feel sure that all details will be properly attended to, so all you need do is come and bring with you your suggestions for making the Oklahoma State Medical Association the very best possible organization of its kind.

#### Editorial Notes—Personal and General

DR. W. B. AUSTIN, Mangum, is reported ill.

DR. W. W. STARK, Okmulgee, is spending two weeks at Mayos.

DR. FRANK SISLER, Bristow, who has been seriously ill, is reported improved.

DR. H. K. SPEED, Jr., Sayre, has been appointed health officer of Beckham County.

DR. J. B. HOLLIS, Mangue, attended the Dallas Southern Clinical Society in March.

DR. H. B. FUSTON, Bokchito, has been appointed health officer for Bryan County.

DR. I. D. WALKER, Blackwell, who has been seriously ill, is reported much improved.

DR. B. B. KIES, McAlester, has been appointed superintendent of health of Pittsburg County.

DR. FRANK SISLER, Bristow, who has been ill recently with pneumonia, is reported improved.

DR. ROY FISHER, Frederick, has been re-appointed county health commissioner of Tillman County.



DR. L. J. MOORMAN, Oklahoma City, has been re-elected president of the State Tuberculosis Society.

DR. E. S. PATTERSON, Antlers, has been appointed county health officer of Pushmataha County.

DR. FRANK A. STUART, Tulsa, announces the opening of his offices, Suite 311, Medical Arts Building.

DR. W. C. WAIT, McAlester, has been appointed superintendent of the Western Oklahoma Tuberculosis Sanitarium at Clinton.

DOCTORS H. M. PRENTISS, Nowata, and M. B. Scott, Delaware, have returned from Mayos where they spent two weeks in the clinic.

DR. WALTER HARDY, Ardmore, has returned from Kansas City, where he attended the meeting of the American College of Surgeons.

DR. W. F. GRIFFIN, Watonga, has had his license re-instated as of March 13, 1935, this being the expiration of one year suspension by the State Board of Medical Examiners.

DRS. R. M. ANDERSON and A. C. McFARLAND, Shawnee, together with Dr. Anderson's brother, Dr. E. P. Anderson of Nashville, Tenn., have been on a Mediterranean cruise, and were expected to return to the states in March.

### *News of the County Medical Societies*

LINCOLN County Medical Society met at Chandler March 6th. Guests of the occasion were Doctors Horace Reed, C. B. Taylor and J. F. Kuhn, Oklahoma City, Sam A. McKeel, Ada, and Mr. L. W. Kibler, also of Oklahoma City.

OKMULGEE-OKFUSKEE County Medical Societies met March 12th at Okmulgee, entertaining the dental profession and druggists of the two counties at dinner. Following the dinner the Eli Lilly Company presented their talking picture on the production of insulin.

### AMERICAN MEDICAL GOLFERS PLAY IN ATLANTIC CITY, MONDAY, JUNE 10TH.

The American Medical Golfing Association will hold its twenty-first annual tournament at the Northfield Country Club in Atlantic City on Monday, June 10, 1935.

Thirty-six holes of golf will be played in competition for the seventy trophies and prizes in the nine events. Trophies will be awarded for the Association Championship; thirty-six holes gross, the Will Walter Trophy; the Association Handicap Championship, thirty-six holes net, the Detroit Trophy; the Championship Flight, First Gross, thirty-six holes, the St. Louis Trophy; the Championship Flight, First Net, thirty-six holes, the President's Trophy; the Eighteen Hole Championship, the Golden State Trophy; the Eighteen Hole Handicap Championship, the Ben Thomas Trophy; the Oldguard Championship, limited to competition of past presidents, the Wendell Phillips Trophy; and the Kickers Handicap, the

Wisconsin Trophy. Other events and prizes will be announced at the first tee.

A. M. G. A. Members in Every State of the Union.

Dr. Charles Lukens of Toledo is president and Dr. C. H. Henninger of Pittsburgh and Dr. John B. Morgan of Cleveland are vice-presidents of the American Medical Golfing Association, which was organized in 1915 by Dr. Will Walter, Dr. Wendell Phillips and Dr. Gene Lewis, and now totals 1,100 members representing every state in the union. The living past presidents include Dr. Thomas Hubbard of Toledo, Dr. Fred Bailey of St. Louis, Dr. Edward Martin of Media, Pa., Dr. Robert Moss of LaGrange, Texas, Dr. Charlton Wallace of New York, Dr. Will Walter of Chicago and Charlottesville, Va., Dr. James Eaves of Oakland, Calif., Dr. Chester Brown of Danbury, Conn., Dr. Samuel Childs of Denver, Dr. W. D. Sheldon of Rochester, Minn., Dr. Walter Schaller of San Francisco, Dr. Edwin Zabriskie of New York, Dr. Frank A. Kelly of Detroit, Dr. John Welsh Croskey of Philadelphia, and Dr. Homer K. Nicoll of Chicago. The first president of the A. M. G. A., Dr. Wendell Phillips of New York, who played in every tournament since 1915, died on November 16, 1934.

### Atlantic City Committee

The Atlantic City Committee is under the chairmanship of Dr. Walt P. Conaway, 1723 Pacific Ave., Atlantic City. He will be assisted by Drs. I. R. Beir, John Pennington, Alfred Westney, and Rostin White.

The Northfield Country Club of Atlantic City is described by Chairman Conaway as "certainly one of the most interesting courses in this district. Many championships have been held at Northfield, and I am sure the visiting doctors will be delighted with it in every sense of the word. It has a beautiful club house with every facility ready for the pleasure of the guest."

### Application for Membership

All male fellows of the American Medical Association are eligible and cordially invited to become members of the A. M. G. A. Write the Executive Secretary, Bill Burns, 4421 Woodward Avenue, Detroit, for an application blank. Participants in the A. M. G. A. tournament are required to furnish their home club handicap, signed by the secretary. No handicap over 25 is allowed, except in the Kickers' (Blind Bogey). Only active members of the A. M. G. A. may compete for prizes. No trophy is awarded a fellow who is absent from the annual dinner.

The twenty-first tournament of the American Medical Golfing Association promises to be a happy affair. The officers anticipate some two hundred medical golfers from all parts of the United States and Canada will attend.

### IMMUNIZE NOW—STAMP OUT DIPHTHERIA

May Day—Child Health Day has become an established institution throughout the United States. It was inaugurated in 1924 by the American Child Health Association for the purpose of calling the attention of parents, communities, and the public in general to the need for measures to protect the health of children.

In 1928 the United States Congress passed a joint resolution designating May first as Child Health Day, and authorizing the President to issue a proclamation requesting national observance of the day. In 1929 the Conference of State and Provincial Health Authorities of North America appointed a May Day Committee. In 1932 this committee took over from

the American Child Health Association, with the continuing assistance of that association, the responsibility for the annual observance of Child Health Day. In the states the work is under the direction of State Departments of Health.

Child Health Day celebrations are intended only to mark and emphasize either the inauguration or the culmination of year-round work for improvement of the health of children. The project for 1935 is diphtheria immunization. This was chosen because there has been but little reduction since 1930 in the number of deaths from diphtheria throughout the country. While particular emphasis will be laid on immunization this year, it is not intended that the project be limited to 1935. On the contrary, one of the chief objectives is to have the work continued year after year by the medical profession.

**IMMUNIZE NOW**—Stamp Out Diphtheria, is the slogan.

The measures proposed are:

To immunize all children between the ages of six months and six years;

To make early immunization a routine practice by all physicians.

The majority of pediatricians do immunize the babies under their care during the first year of life. Physicians in general practice should follow this procedure.

State departments of health and the unofficial organizations interested in children are calling the attention of parents and communities to the need for early diphtheria immunization. Each individual physician should be prepared to take care of the applications for immunization. Cooperative plans for this work should be made by the local medical societies and departments of health in all communities. When a local medical society has perfected plans for this phase of preventive medicine, there is no reason why it would not be possible to assume gradually other types until eventually preventive medicine forms an important part of the practice of all physicians.

This project offers opportunity for many medical societies and many physicians to assume their rightful leadership in the preventive medical work of their communities.

Descriptions of the plans of certain medical societies for community child health work will be found in:

The Experiments of the Medical Society of New Jersey in Furnishing Community Health Service. Section on "The Public Health Hour," page 162.

LeRoy A. Wilkes, M.D., Executive Secretary, Medical Society of New Jersey. American Medical Association Bulletin, December, 1934.

The Children's Hour. Nassau Medical News, December, 1934. Reprinted in Westchester's Health, February 11, 1935. Published by the Westchester County Department of Health, White Plains, New York.

What the Detroit Plan Offers. Henry F. Vaughan, Dr. P. H., Health Commissioner, Detroit. Reprinted from the December, 1933, issue of Medical Economics.

#### ANNOUNCEMENT

The Annual Meeting of the American College of Physicians will be held in Philadelphia April 29th to May 3rd. Philadelphia is the cradle of American medicine and always gives the most wonderful meetings—it being said by many that they would rather attend a meeting in Philadelphia than any other city in the United States, because there is better native material there for the scientific success of a meeting.

#### DOCTOR ROSS F. TERRELL

Dr. R. F. Terrell, physician of Stigler, died March 15th in a Fort Smith hospital, after a short illness. Death was due to spinal meningitis.

Born in Tennessee in 1875, Dr. Terrell had practiced at Stigler for the past 33 years.

He was a 33rd degree Mason; a Scottish Rite Mason of the McAlester Consistory, a York Rite Knights Templar of the Oklahoma City Chapter, a member of Amorita Grotto of Fort Smith, and a member of the Shrine at Muskogee. Dr. Terrell was a member of the Haskell County Medical Society, also the Oklahoma State Medical Association.

He is survived by his wife, one son, one brother and one sister.

Interment was at Stigler.

#### DOCTOR JOSEPH ORLANDO GLENN

Dr. J. O. Glenn, Stroud, died at his home February 9, 1935. He was born in Roanoke, Virginia, April 3, 1859. Dr. Glenn's medical education was received at the medical college of St. Joseph, Mo., in 1882. In 1900 he moved to Oklahoma, first locating in Oklahoma City, and in 1902 began the practice of medicine in Stroud.

Funeral services were conducted by Rev. B. E. Newton at the home, with interment in Rose Hill cemetery in Tulsa.

#### DOCTOR JABEZ NORTH JACKSON

Dr. Jabez N. Jackson, who at the time of his death, March 10th, was Director of Public Health of Kansas City, Missouri, was 66 years of age. He was a graduate of the University of Kansas City in 1891 and did graduate work at the New York Polyclinic. He was connected with the teaching staff of his alma mater from 1891 until 1911.

Dr. Jackson held membership in many of the leading medical and surgical organizations of the United States and was elected president of the American Medical Association at the Dallas session in 1926. He was awarded the Doctor of Science degree from Park College in 1926 and the Doctor of Law degree from the University of Missouri in 1927.

It has been the pleasure of the Oklahoma State Medical Association to have Dr. Jackson as a guest of honor on many occasions. His last address before our general session was three years ago; however, he has since that time visited the state on several occasions. The profession of the United States in general and the Southwest in particular has lost one of the great leaders in his death and we of Oklahoma will feel his loss more keenly, and extend to his wife and daughter our most sincere sympathy.



# CONDENSED PROGRAM FORTY-THIRD ANNUAL SESSION, OKLAHOMA STATE MEDICAL ASSOCIATION

OKLAHOMA CITY, MAY 13, 14, 15, 1935

SKIRVIN HOTEL

General Scientific Sections will be held, beginning at 8:45 A.M., in the Venetian Room, thirteenth floor.

TUESDAY, MAY 14.

8:45 to 9:30 A.M.—Moving pictures.

9:30 to 10:00 A.M.—“Public Health and Organized Medicine in the State of Oklahoma,” Dr. Chas. M. Pearce, State Health Commissioner, Oklahoma City.

10:00 to 11:00 A.M.—“The Management of Brain Injury,” Dr. F. R. Teachenor, Kansas City.

11:00 to 12:00 A.M.—“Changes Confronting Modern Medicine,” Dr. R. G. Le-land, Chicago.

WEDNESDAY, MAY 15.

8:45 to 9:30 A.M.—Moving pictures.

9:30 to 10:00 A.M.—Memorial Ceremony.

10:00 to 11:00 A.M.—“Modern Trend in Surgery,” Dr. Max Thorek, Chicago.

11:00 to 12:00 A.M.—“Treatment of Toxemia Late in Pregnancy,” Dr. M. Edward Davis, Chicago.

## SECTIONS

All Sections will meet at 1:30 P.M., Tuesday, May 14th, and at the same hour on Wednesday, May 15th. Meeting places will be as follows:

*Surgery*—Venetian Room, thirteenth floor.

*Medicine*—Crystal Room, Mezzanine floor.

*Obstetrics and Pediatrics*—Empire Room, Mezzanine floor.

*Eye, Ear, Nose and Throat*—Wilson Room, Mezzanine floor.

*Urology and Dermatology*—Parlor G, Mezzanine floor.

## GENERAL MEETING

### COUNCIL.

The Council will meet at 3:00 P.M.,

Monday, May 13, in Dr. Willour's room, fourth floor, for the transaction of business affairs, and thereafter on call of the President.

## HOUSE OF DELEGATES.

Will meet at 7:30 P.M., Monday, May 13, Empire room, Mezzanine floor, and at 8:00 A.M., Tuesday, May 14, same place.

## GENERAL MEETING

TUESDAY, MAY 14.

8:00 P.M.

Empire room, Mezzanine floor, Skirvin Hotel, Dr. Henry H. Turner, General Chairman, presiding.

*Invocation*—Rev. A. G. Williamson, President, Oklahoma City University.

*Introduction of Guests*—Dr. Henry H. Turner.

*Address of Welcome*—Dr. Rex Bolend, President, Oklahoma County Medical Society.

*Response*—Dr. James C. Johnston, McAlester.

*Introduction of President-Elect*—Dr. LeRoy Long, Oklahoma City, retiring president.

*President's Address*—Dr. L. H. Ritzhaupt, Guthrie.

9:30 P.M.

President's Reception and Dance, Venetian Room, thirteenth floor.

## OKLAHOMA COUNTY COMMITTEES

DR. HENRY H. TURNER,  
General Chairman.

## ADVISORY COMMITTEE.

Dr. L. J. Moorman, Dr. C. E. Barker, Dr. E. S. Ferguson, Dr. LeRoy Long, Dr. Horace Reed, Dr. A. B. Chase.

*Finance*—Dr. Bert F. Keltz.

*Entertainment*—Dr. D. H. O'Donoghue.

*Registration*—Dr. J. C. MacDonald.

*Hotels*—Dr. R. O. Early.

*Memorial Ceremony*—Dr. E. S. Lain.

*Golf*—Dr. Leo. Cailey.

*Scientific Exhibits*—Dr. Ray M. Balyeat.

*Medical Reserve Corps Dinner*—Dr. S. F. Wildman.

*Reception*—Dr. C. P. Bondurant, and members of the Oklahoma County Medical Society.

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### SCIENTIFIC EXHIBITS

Dr. Max Thorek, Chicago, Illinois. Title of exhibit: Electrical Coagulation.

Dr. Henry H. Turner, Oklahoma City, Oklahoma. Title of exhibit: Endocrinology.

Dr. Curt VonWedel, Oklahoma City, Oklahoma. Title of exhibit: Plastic Surgery.

Dr. Earl D. McBride and Dr. E. Golfain, Oklahoma City, Oklahoma. Title of exhibit: Treatment of Chronic Arthritis.

Section on Urology, Oklahoma City, Oklahoma. Title of exhibit: Urological Exhibit.

Lain and Roland Clinic, Oklahoma City, Oklahoma. Title of exhibit: Dermatology.

Dr. John F. Burton, Oklahoma City, Oklahoma. Title of exhibit: Plastic Surgery.

Dr. W. K. West and Dr. C. R. Rountree, Oklahoma City, Oklahoma. Title of exhibit: Fracture Exhibit.

Dr. Ray M. Balyeat, Oklahoma City, Oklahoma. Title of exhibit: Therapeutic Value of Iodized Oil in Asthma.

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### GOLF

MONDAY, MAY 13TH

Annual Tournament, Oklahoma City Golf and Country Club (Nichols Hills), starting at 9:00 A.M. Transportation from the Skirvin Hotel will be provided. All green fees paid.

TUESDAY, 14TH, WEDNESDAY, 15TH

All members of the State Medical Association may play at any of the following courses, green fees paid by person playing:

Oklahoma City Golf and Country Club

Twin Hills Golf Club

Edgemere Golf Course

Lincoln Park Golf Course.

Committee: Drs. Leo F. Cailey and Wayman J. Thompson.

Oklahoma City business firms donating prizes.

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### IMPORTANT

Please submit all proposed resolutions to your secretary at the earliest possible moment, in order that these may be referred to the Resolutions Committee before the annual meeting, thereby saving considerable time at the meeting of the House of Delegates. Please do not consider this an ordinary request, for it is important that this be done so that the meeting Tuesday morning, May 14th, may be over in time to participate in the general session program.

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### COMMITTEE REPORTS

These reports are made in compliance with provisions of the Constitution and By-Laws which call for publication of such matter in the issue of the Journal preceding the Annual Session.

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#### REPORT OF THE COMMITTEE ON CONSERVATION OF HEARING

Research of paramount importance is being carried on with regard to the pathology of the labyrinth. The habit now in some institutions of including an examination of this organ in every post-mortem in which there was record of ear-study during life, is sure to be productive of much good. It was this kind of correlation of pathological with clinical work that made of internal medicine an exact science, and there is reason to hope that it will prove very helpful in the field of otology.

Attention has been centered of late with renewed interest upon the problem of otosclerosis. Anything we can find out as to the nature of this disease is of the utmost importance, because it is at the bottom of practically all cases of chronic progressive deafness.

The pathology is located in the bony capsule which surrounds the delicate sensory nerve ending of the auditory nerve, and it is characterized by new formation and deposit of bony material in this structure. There is a predilection of these hard bony growths or spurs to form in the region of the oval window; this results in fixation of the ossicles, paralyzing the mechanism of the middle ear; later the nerve becomes involved, rendering the deafness more profound.

The pathological anatomy is such that we could hardly expect results from the ordinary methods of treatment; in fact, all efforts in that direction have proved unavailing. However, we venture to say there is now ground for hope. One reason for saying this



you will consider strange, namely, that these studies have brought out the fact that otosclerosis is a much commoner malady than we have always supposed it to be.

To explain, let us recall the warfare waged against tuberculosis. It is not so many years ago that the great white plague was looked upon as an unconquerable foe; and it was taken for granted that the poor soul so unfortunate as to fall a prey was soon doomed to die; there was no remedy, there was no hope. But pathologists, as they made numerous examinations on the bodies of patients who had succumbed from other diseases, soon discovered that many of them presented at the same time foci of tuberculosis in various stages of progress; in fact, that contrary to previous opinion, it was really a common affection. If so many individuals have it, and comparatively so few die of it, it follows that in many cases the process must be arrested or cured. How successful has been the campaign based on this assumption, we all very well know.

Now pathologists, making careful examination of the labyrinth, are telling us that small otosclerotic foci are frequently to be found post-mortem in patients who presented no evidence of deafness during life. We may conclude that as with tuberculosis the process was arrested—or at least never progressed to the serious stage.

Taken as a whole, otology has made remarkable progress. This is particularly evident in the management of our suppurative disease, and their surgical complications. With improved methods and technique we are very much more successful than formerly in curing acute suppurative ears and thus preventing their merging into the chronic; and in the cure of the chronic suppurative without resort to surgical measures. When finally surgical interventions are demanded, they are carried out with greater precision, and more successfully than ever before. The ordinary operation for mastoiditis without complication has become, in the hands of a competent specialist, a simple and safe procedure, and within the last year or so, especially due to the labors of Eagleton, Kopetzky, Almour and others, we are now able to follow an infectious process deep into the petrous portion of the temporal bone at the very base of the brain formerly considered inaccessible. We may boast, too, an increase in our knowledge of intra-cranial complications of ear disease, and a more frequent success in saving cases from a fatal termination.

In accordance with prevalent trend in all branches of medicine, the hygienic aspects of otology have also of late received considerable attention. One of the chief evils of frequent and prolonged colds is their tendency to involve the ears. All, therefore, that we are learning about the cause and prevention of this common malady is of vital importance from an aural standpoint.

#### Treatment of Deafness in Childhood

When one begins to approach this subject, in the light of our present day knowledge, he finds that it is necessary to visualize the child as a whole rather than confine his attention to an individual part such as the ear. A great many children have defects of hearing at a very early age which remains unnoticed and many times such defects are accompanied by a devitalized general physical condition. We are inclined to feel that the majority of children suffering from deafness may have their hearing temporarily restored by local treatment but that it is imperative to increase their resistance if one wishes a permanent cure.

Prevention of deafness is the most important thing

in childhood. Such prevention can only be accomplished by seeking out those children of pre-school age or school age who are suffering from slight defects of hearing which can be readily overcome.

Very young children, who are not old enough to understand, can not be treated very severely. Such children are subject to frequent colds in the head and nasal sinus infections which can most often be cleared up by proper regulation of the diet, particularly the administration of fat vitamins in the form of cod liver oil. Children of these tender years must be properly and warmly clothed. The tonsils and adenoids of all such children must be removed as soon as any evidences of an ear condition develops.

Older children between the ages of eight and fourteen can usually be treated when once the confidence of the child is obtained. Often times it is necessary to allow a new patient to watch you treat an old patient until he sees that you are not going to do anything to hurt him. The type of treatment will depend on whether you are treating a suppurative condition or a so-called catarrhal one.

Suppurative ears in children have been a grave problem for a number of years. There was a time when many of these little patients were forced to submit to a radical mastoid operation but it is our opinion that such operations are unnecessary in the majority of cases. In all these purulent conditions the patient must be seen at regular intervals and the ears kept as clean as possible. Wiping out the ear canal frequently during the day with a small piece of cotton is preferable to irrigation. When the patient presents himself at the office the type of treatment to be used will vary with the individual case.

In acute purulent otitis media we recommend an early incision of the drum membrane or paracentesis. After the paracentesis the patient should be seen daily by the physician. If the ear is properly taken care of in the acute stage there is very seldom any complications.

#### Treatment of Deafness in Adults

It is seldom that one sees a deafened patient, with any marked degree of deafness, without feeling that he is dealing with an entity which needs physical and mental reconstruction. Hard of hearing patients not only suffer from definite defects in hearing, but from certain mental and physical disturbances which place them in a class by themselves. He resents the fact that he is hard of hearing; he refuses to admit that other people think he is hard of hearing; he feels that the world is not treating him in the same way as it would if he had good hearing and, taking it all together, he places himself in a position where he is resistant to almost every line of suggestion for his improvement that is given him. Taking all these factors into account, how can one possibly think that he can obtain any improvement in an individual by the ordinary time-worn methods of treatment?

In treating the adult hard of hearing, one must keep in mind that he is after two results. The first is the actual improvement in the patient's hearing, and the second is actual improvement in the patient's well-being so that he is able to bear his handicap with greater fortitude and thus attain greater hearing. Regardless of all local therapeutic measures which we employ, nothing can be accomplished unless one takes into consideration the general physical condition of the patient, the local condition of the nose and throat and the psychological reaction of the patient. In treating hard of hearing people, one must realize two facts. First, of his treating a definite ailment which he should improve if possible, and secondly, he is treating an individual whose entire life's

happiness depends upon how much his mental attitude towards his ailment can be overcome.

J. E. Davis, Chairman;  
L. C. McHenry,  
Charles M. Fullenwider.

#### REPORT OF THE COMMITTEE ON MEDICAL ECONOMICS

The subject of medical economics has been foremost in the minds of the profession, some departments of our federal government, and a number of lay organizations throughout our country. Two important bills in Congress have had active support both in Congress and from without. Both are direct steps toward the establishment of state medicine and have aroused the active and united opposition of organized medicine. Present indications are that neither of these bills will pass at this session of Congress but their advocates will continue the fight for their enactment and the burden of their opposition rests directly upon the medical profession.

The House of Delegates of the American Medical Association at the annual meeting voiced their opposition to all such measures and at a call meeting in February reaffirmed their stand and in addition made some suggestions as to how local medical societies could meet some of the problems that have become acute during the present general depression.

In some parts of the state the local societies have started moves to try to work out something from their suggestions but so far as we have been able to learn no definite plans have been adopted.

The result to date is an almost unanimous decision of the medical profession to support the action of the House of Delegates of the American Medical Association; that is, that whatever is done must be controlled directly by the medical profession and not by federal, state or local governments, nor by any lay organizations.

The question of pay for medical services to FERA employees and their families was taken up by this committee but was later transferred to a special committee, all of whose members live in Oklahoma City where they can be in contact with the administrator.

P. P. Nesbitt,  
E. P. Davis,  
Ben H. Cooley,  
Committee Medical Economics.

#### REPORT OF COMMITTEE ON "STUDY AND CONTROL OF CANCER"

Since our last report, the cancer situation is unchanged and the need for active, intelligent effort is still as necessary as ever. The purpose and the organization of the cancer work remains the same.

##### Work in 1935

Since the 1934 report was made the following meet-

ings, clinics and lectures were sponsored by the local county societies:

County Medical Societies Sponsoring all Clinics and Lectures	No. of Patients Examined	Attendance by Physicians, Nurses and Lay—Est.
1. McAlester (Pittsburg Co.)	0	45
2. Woodward (Woodward Co.)	26	125
3. Oklahoma City (Okla. Co.)	0	200
4. Shawnee (Pottawatomie Co.)	3	125
5. Sayre (Beckham Co.)	10	200
6. El Reno (Canadian Co.)	18	45
7. Duncan (Stephens Co.)	0	175
8. Tahlequah (Cherokee Co.) Northeastern State Teachers College	0	1100
9. Shawnee (Pottawatomie Co.) Oklahoma Baptist Univ.	0	170
10. Alva (Wood Co.) Northwestern State Teachers College	0	1000
11. Ada (Pontotoc Co.) East Central State Teachers College	1	850
12. Durant (Bryan Co.) Southeastern State Teachers College	2	250
13. Alva (Wood Co.) Rotary Club	0	40
14. Ada (Pontotoc Co.) Rotary Club	0	40
15. Durant (Bryan Co.) Rotary Club	0	36
16. Seminole (Seminole Co.)	2	24
17. Bartlesville (Washington Co.)	14	200
18. Tahlequah (Cherokee Co.)	15	1000
19. Wagoner (Wagoner Co.)	3	5
20. Enid (Garfield Co.)	20	50
21. Kiwanis Club	5	19
21. Altus (Jackson Co.)		
	119	5749

Wherever clinics and public meetings have been held the profession has been pleasantly surprised at their reception and value.

The lectures to the State Teachers' Colleges have been popular and are thought to be productive of much good.

The organization of these clinics and meetings have been possible only through the splendid work of Mr. L. W. Kibler with the Department of Public Relations of the State University.

The American Society for the Control of Cancer has given invaluable assistance in many ways, principally in furnishing literature, projection equipment and films.

Plans are now being made for clinics and meetings in the Oklahoma Panhandle.

##### Finances

To defray minimum expenses, such as organization, clerical work and traveling expenses, it has been necessary to charge each County Society \$12.00 to defray actual expenses.

At the Tulsa meeting in 1934 an appropriation of \$250.00 was made for the purpose of use for expense connected with the work in localities where there was no medical organization or where the medical society could not afford to pay \$12.00. To date only two withdrawals have been made from this fund, namely: Wagoner County and Cherokee County for a total of \$24.00. The planned trip into the Panhandle will require an estimated expense of \$50.00. This will leave \$176.00 of the original \$250.00 unused.

It is hoped that the Council and House of Delegates will find it possible to appropriate not less than \$250.00 for the use of this committee in the ensuing year.

Wendell Long, Chairman;  
James Stevenson,  
E. S. Lain.



## REPORT OF COMMITTEE ON POST-GRADUATE MEDICAL TEACHING

A report of this committee is necessarily very brief this year because no post-graduate medical courses have been given. Arrangements were made during the summer and early fall for a course during the winter months, but at a late date some members of the faculty resigned, and it was necessary to discontinue this course.

Your committee then decided that, inasmuch as a new state administration would soon be inaugurated and there was a possibility that the Board of Regents might rescind its order of last year abolishing medical extension, it would be best to await further developments. At the time of writing this report no action has been taken by the board.

Inasmuch as the organization and conduction of these courses requires the constant time of an individual, the committee recommends that it be empowered by the House of Delegates to employ such a person, and that a working fund of at least \$2,400.00 be created for this purpose, to be known as the Post-Graduate Medical Teaching Fund. The fees derived from the courses would likely be sufficient to cover expenses, and the fund would probably not be used.

The committee also suggests that the House of Delegates request the Governor and Board of Regents to re-establish post-graduate medical teaching in the University, and on the same status which it formerly functioned.

Henry H. Turner, Chairman;  
Wann Langston,  
H. C. Weber.

## CALCINOSIS CIRCUMSCRIPTA: REPORT OF CASE

Gale Wilson, Seattle (Journal A. M. A., Feb. 2, 1935), observed a typical case of calcinosis circumscripta, with extensive blood chemistry and clinical observations over a period of one year. The blood chemistry tends to show that the deposits of calcium phosphate in the fingers may be due to an endogenous hypervitaminosis D caused by an unusually high blood cholesterol (480 mg. per hundred cubic centimeters) superimposed on an old, remitted Raynaud's disease. All types of eliminatives have been tried, as well as changes in the acid-base ratios, high protein, low protein, fat free, purine free and other diets, all without doing other than slightly slowing up the rate of maturity of the nodules, even after the blood chemistry had been restored to normal.

## ADVANCES IN OVARIAN THERAPY

A gynecologist, whose name is known from coast to coast, recently commented in the Journal of the American Medical Association (February 23rd) about the cost of ovarian therapy: "It is greatly regretted," he wrote, "that the American products have not been available at prices that justify their preference or at least their being on a parity with the imported material."

Physicians who have read this statement will be interested in the announcement from the Squibb Laboratories that the potency of Amniotin—a physiologically tested preparation of the ovarian follicular hormone, has been increased three-fold and the cost per unit has been reduced to about one-tenth of its former price.

For hypodermic administration, Amniotin in Oil is now distributed in 1 cc. size ampuls, containing 8000 and 2000 International Units per cc.

Amniotin Capsules and Pessaries (vaginal suppositories) now contain 1000 and 2000 International Units, respectively. The price of these packages is now so low as to compare favorably with the cost of insulin.

These new high-potency preparations should make ovarian hormone (estrin) therapy eminently more satisfactory. Amniotin is indicated in the treatment of menopausal symptoms; involutational melancholia; gonorrheal vaginitis in children; senile vaginitis; breast hyperplasia (lobular type associated with bleeding); selected cases of frigidity, and migraine of pituitary origin.

## CIGARETTE SMOKE

Michael S. Mulinos and Raymond L. Osborne, Pharmacology of Inflammation: III. Influence of Hygroscopic Agents on Irritation from Cigarette Smoke. Proc. Soc. Exp. Biol. & Med. 1934, 32, 241-245. A successful attempt to measure objectively the irritant properties in cigarette smoke is reported. The method used was that described by Hirschhorn and Mulinos: Proc. Soc. Exp. Biol. & Med., 1930, 28, 168. A study of the influence of hygroscopic agents on the edema produced on the conjunctive of rabbits is given. The hygroscopic agents most commonly used in cigarettes are glycerine and diethylene glycol. It was stated that "It is obvious that the cigarettes which have been made with diethylene glycol as hygroscopic agent prove to be less irritating than those with glycerine." Not only was the irritation greater in the case of glycerine than from diethylene glycol, but it lasted a longer time. It is further stated that, "The edema produced by the smoke solution from the untreated cigarette lasted an average of 31 minutes (8-82); that from the diethylene glycol lasted 8 minutes (0-21); and that with the glycerine lasted 45 minutes (17-122)."

## TREATMENT OF PERFORATED "PEPTIC" ULCERS

Hugh H. Trout, Roanoke, Va. (Journal A. M. A., Jan. 5, 1935), discusses the acute perforations that demand immediate operation. The deductions reached are based largely on personal experience in the treatment of forty-one such cases. This experience has been greatly influenced, however, by numerous visits to other hospitals, conversations with other surgeons, and a careful review of the literature. Of course it is generally conceded, even by the radical adherents of the nonsurgically inclined of medical men, that surgery offers the best hope of recovery. Therefore the author confines his discussion to surgical intervention in this condition, considered under the following three headings: (1) drainage after closure of the perforation, (2) advisability of immediate gastro-enterostomy following closure of perforation and (3) treatment of perforations on the posterior wall of the stomach and duodenum associated with hemorrhage, from which he draws the following conclusions: 1. Drainage of the peritoneal cavity should be avoided if possible. 2. Continuous gastric suction through a nasal tube has decreased the indications for an immediate gastro-enterostomy. 3. Partial gastric resection is the operation of choice in those cases of posterior perforations of the stomach or duodenum which are associated with massive hemorrhage.

# ABSTRACTS «» REVIEWS «» COMMENTS AND CORRESPONDENCE

## INTERNAL MEDICINE

Edited by L. J. Moorman, M.D., 1200 N. Walker,  
Oklahoma City; C. E. Bradley, M.D.,  
Medical Arts Building, Tulsa; Hugh  
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Oklahoma City

By C. E. BRADLEY, M.D.

**Cevitamic Acid (Ascorbic Acid) in the Treatment of Infantile Scurvy.** Arthur F. Art, M.D., and I. M. Epstein, M.D., Chicago, Ill. J.A.M.A., Volume 104, Number 8, February 23, 1935, page 634.

In 1928 Szent-Gyorgi isolated a chemical which he believed was hexuronic acid and was identical with vitamin C. Well controlled experiments in laboratory animals showed that the chemical did protect them against scurvy.

Although the chemical has been shown to be  $C^6H^8O_6$ , cevitamic acid, instead of  $C^6H^8O_7$ , hexuronic acid, it has been produced in crystalline and tablet form by Merck and Company. Their product is called Cebione and the authors cite five cases from the literature in which 30-40 mg. of Cebione daily (administered orally or intravenously) was responsible for recovery of humans from scurvy.

In 1933 Kramer showed in his studies with 18 healthy infants that premature infants tolerated 15 mg. of cevitamic acid daily (orally), new-born infants from 20 to 25 mg. daily, and healthy older nurslings from 25 to 50 mg. daily without any ill effects.

The authors presented three cases: an eleven months old male infant, a one year old female child, and a nine months old female infant, who were admitted to the hospital with clinical and roentgen examinations typical of scurvy. Cevitamic acid was given orally by dissolving one tablet (10 mg. with lactose) in 10 to 20 cc. of water. The first infant was given 30 mg. of cevitamic acid orally for one month, at the end of which time the scurvy as well as secondary abscesses were healed. The other two infants received 30 mg. of cevitamic acid daily for four days and then 40 mg. daily for ten days. Both had recovered from scurvy at the end of this time. Both of the later patients showed a marked decrease in tenderness in 12 to 48 hours after the first administration of cevitamic acid.

The cevitamic acid content of the blood was determined by the methods described in "Microchemical Method for Determining Hexuronic Acid Content of Foodstuffs," by L. J. Harris and S. W. Ray, Biochem. J. 27: 590, 580, 1933, showing that the cevitamic content of the blood was diminished in the patients who had scurvy and that the administration of Cebione definitely increased the amount in the blood stream. The determination of the cevitamic acid content of the urine was not considered significant. If these methods prove sufficiently accurate, it may be possible to demonstrate definitely a prescurbic state in infants and children who manifest no symptoms of active scurvy.

**Celiac Disease (Chronic Intestinal Indigestion). A Report of Three Cases With Autopsy Findings.** Julius H. Hess, M.D., and Otto Saphir, M.D., Chicago, Illinois. "The Journal of Pediatrics," Vol. 6, No. 1, January 1935, page 1.

Celiac disease, as it is clinically known, is a manifestation of chronic indigestion, showing abdominal distention, intermittent attacks of diarrhea—with large, pale, mushlike, foul-smelling stools. The symptoms are much more difficult to interpret in earlier stages of the disease.

The anatomical findings are still the subject of much controversy, and a survey of the literature shows that changes in almost every organ of the digestive tract and in the glands of internal secretion have been held responsible for celiac disease from time to time. If such changes were not found, primary functional disorders were thought to be the causative factors.

## Case Reports

Three cases were presented with special emphasis placed upon the histopathological findings. 10% formalin fixed sections of the thyroids, suprarenals, thymus, liver, pancreas, and gastrointestinal tract were stained in addition to hemotoxin-eosin, by van Gieson's method, Foote's reticulum, and Warthin-Starry method for presence of connective tissue, reticulum fibers and spirochaeta palliada, respectively.

**Case 1. Onset and Course:** A white female, 9 months old, infant weighed  $7\frac{1}{2}$  pounds at birth. She had a history of frequent bowel movements, dating from shortly after birth; was breast-fed with complementary feedings of pasteurized milk till she was  $4\frac{1}{2}$  months old, and was then placed on cow's milk with carbohydrates. She was admitted to the hospital first at 5 months with a diagnosis of celiac disease. She had no illness except intestinal distress with four to six large stools daily. She weighed nine pounds, fourteen ounces. She was placed on a high protein diet and discharged after 13 days in the hospital. She was under observation for the next 4 months and although she was kept on a high protein diet had several recurrences of intestinal disturbances. At 9 months she was readmitted with a diagnosis of bronchial pneumonia. She weighed 12 pounds, 14 ounces, and showed no symptoms other than those of pneumonia except distended abdomen. She died 12 days after admission.

**Autopsy Findings:** Bronchopneumonia with abscess formation, chronic pancreatitis with much fibrosis, pancreatic lithiasis with dilation of the ducts, chronic enteritis, and fat infiltration of the liver (centrally located). Warthin-Starry stains failed to reveal spirochaetes and the suprarenals, thymus, and thyroid revealed no histopathological changes.

**Case 2. Onset and Course:** A white male infant, age 19 months, had ten to twelve stools daily, composed largely of mucous and curds from birth to 6 months of age. After 6 months the stools were more normal in color but were large and foul in odor. Vomiting was also frequent up to the third month. Feeding: Breast milk complemented by cow's milk with dextrimaltose to two months of age, complementary feeding of protein milk during the third



month, protein milk alone from the third to the sixth month. Then he was placed on goat's milk for one month, and then on Carnation milk until he was nine months old, when he weighed 16 pounds, 10 ounces. At this time he developed tonsillitis and lost 1 pound, seven ounces. He was admitted to the hospital first at 10½ months with diagnosis of rickets and chronic intestinal indigestion, with possibility of a food allergy. He was placed on a high protein diet and discharged in 10 days. He continued on this diet with cod liver oil and viosterol and was readmitted to hospital at 18 months with diagnosis of influenzal pneumonia and died on the third day after admission.

**Autopsy Findings:** Bronchopneumonia, recent chronic pancreatitis with much fibrosis, pancreatic lithiasis, dilation of the pancreatic ducts, chronic enteritis, abnormal length of the jejunum, and fat infiltration of the liver (centrally located) spirochaetes were not demonstrated, and suprarenals, thyroid and thymus showed no histopathological changes.

**Case 3. Onset and Course:** A white female child, age 3 years, was admitted first at 7 months. She was breast-fed for two weeks, placed on cow's milk formula for two months, and then was placed on various formulas in the next six weeks because of unsatisfactory gain in weight. She developed her first attack of diarrhoea at four months, which continued for one month with recurrence three weeks later.

She was admitted to the hospital the second time at three years, with a history of recurrent attacks since the last admission. She had had pneumonia at 1½ years, and measles at 2½ years. The admission diagnosis, one day before her death, was anhydremic intoxication, celiac disease, and atrepsia.

**Autopsy Findings:** Bronchopneumonia, fibrosis of the pancreas, nephrolithiasis, multiple diverticula of the stomach, chronic gastroenteritis, and fat infiltration of the liver (diffuse). Suprarenals, thymus, and thyroid were negative, as well as stains for spirochaetes.

The authors feel that their cases, as some others suggested in the literature, suggest that primary disease of the pancreas may play an important part in the development of celiac disease, and although the series they present is too small for generalization they wish to stress the need for a careful study of the pancreas, with special staining methods if necessary, before it is pronounced normal.

#### The Protracted-Fractional X-Ray Method (Coutard) in the Treatment of Cancer of the Larynx. J. H. Douglas Webster, London. *The Journal of Laryngology*, Vol. 49, Page 429.

The variety of the methods of treatment for cancer of the larynx has been most confusing to the student of laryngology. Dr. Webster recounts his extensive experience in an interesting manner describing his five or more alternating phases of hopefulness or discouragement. He summarizes the five essentials in Coutard's method of treatment as follows: 1. The use of high voltage (180 or 190 kw.), filtration by 1.5 to 2 mm. of copper or zinc, skin focal distance of 50 or more cm., and two directly opposing lateral fields, with or without supplementary fields on the affected side (in extensive pharyngeal growths, in patients with marked adenopathy, or in patients with very thick necks). 2. Each dose must be protracted, i. e. must have a low minute-intensity as compared with ordinary X-ray treatment technique. Coutard's choice of degree of protraction gives doses which per minute are ten to twenty times weaker than the doses given by the usual methods. Thus, for example, 150

or 180 r will be given in 50 or 60 minutes (3-4 r per minute, not 30 to 40 r or more, as is often given). 3. The doses are highly fractionated (as compared with other fractional methods. Thus at least two daily doses are given, for example, one for an hour in the morning and one for half an hour in the afternoon, with the exception of Sundays; and the doses are divided up over two, three, four or more weeks: the larger the area involved, the longer must be the total period of treatment, as the patient cannot be treated for more than three or four hours a day, if we would avoid undesirable general reactions. 4. An extraordinary high total dosage is administered (and regarded as necessary) as compared with most other symptoms of dosage: on the surface a total of ten to twenty times the mild "erythema dose" in all may be given, and given with safety. 5. For each patient the dose must be estimated beforehand carefully, and then it must be controlled by accurate measurement of the H or, as later used, the r units; and further and most essentially, controlled by the appearance in the pharynx and larynx of the white fibrinous mucosal reaction, and by the appearance on the skin of an epidermitis. The radiologist must be experienced in laryngoscopic examination and should examine the patient daily to note the extent of the mucosal reaction. The skin dose given is the "epidermicidal" dose—Regaud and Nogier first described it in 1913—the effect of which is rather alarming when first seen, but soon passes away, when resulting from the given conditions, with complete repair. The patients should not be treated as ambulant cases; they must be under close supervision, as in advanced cases laryngeal oedema may necessitate a tracheotomy if this has not been performed previously. The method is based upon clinical observation of treatment of tumors arising from different sites in the larynx—tumours either of the skin or of the mucosal type. When a dose has been sufficient to destroy the normal epithelium temporarily, a tumour arising from similar epithelium should also respond to such treatment. For instance, if a dose of about 45 H (4,500 r) is required for the destruction of normal epithelium, and for the mucous membrane reaction about 35 H (3,500 r), then to ensure that such doses reach the level of the lesion to be destroyed, we should have to give about a surface dose double that which we wish to give deeply on the mucosa. It is easy to give a total dose of 7,000 r for epitheliomas of the mucosal type, but for the epitheliomas of lesser sensitivity (skin type) it is difficult to reach a total dose of 90 H or 9,000 r without exceptional care in the technique and administration. When Coutard's doses have reached more than 10,000 r, as a rule there has been no cure and damage has resulted.

#### Pulmonary Lesions Resembling Pneumonia As the Result of Allergic Shock. George L. Waldbott, M.D., and A. D. Snell, M.D., Detroit, Mich. *"The Journal of Pediatrics,"* Vol. 6, No. 2, February 1935, pages 229-233.

Experimentation has shown that in animals which survive anaphylactic shock following an injection of antigen, the syndrome of protracted shock develops: dyspnea, irregularity of breathing, partial pulmonary emphysema, and fall of blood pressure, drop in temperature which is followed by a moderate degree of fever. Dean and Webb have shown that in dogs that survive severe cases of anaphylactic shock the following symptoms occurred after the acute stage had passed: dyspnea, fever, diarrhea, stupor, vomiting, and general malaise. Identical conditions have been produced in guinea pigs with the injection of antigenic substances after the production of shock. The

lesions which thus arise under properly controlled conditions may either offer the picture of interstitial bronchopneumonia, or they may involve lobes; but the microscopic picture suggests that there is a pathological difference from the true pneumonia.

In two cases which the authors have presented previously the patients developed low grade bronchopneumonia, which lasted three to four days, eight and twenty hours, respectively, after the injection of extracts of cottonseed and horse hair. A similar occurrence was encountered following the ingestion of an aspirin tablet in a patient with severe asthma.

During the course of studies on so-called "thymic death," one of the authors presented clinical and pathological evidence that many, if not all, cases thus diagnosed are identical with allergic shock; in a large percentage of these cases after collapse a clinical picture typical of low grade pneumonia develops as illustrated in the following cases:

Case 1: A one year old male infant had been in perfect health except for frequent allergic nasal catarrhs. About a week before death he had an afebrile upper respiratory catarrh from which he recovered in a few days. On the day of his death he appeared perfectly healthy until he became suddenly cyanotic and dyspneic, while drinking a glass of milk, and vomited. The cyanosis, and dyspnea increased, moist rales were noted in the lungs, and signs of consolidation appeared. The temperature rose until at 3 P.M. it was 103. He died at 6 P.M.

In this, as well as in the other cases studied, the microscopic appearance of the lungs suggested that there was a primary edema of the lungs associated with atelectatic and emphysematous areas upon which the infectious process seemed to be superimposed. This was particularly noticeable in some of the slides in which the leucocytic infiltration involved only the marginal parts of the edematous lesions.

The authors felt that this was evidence for the explanation of this type of pulmonary infection and that it would be of value to establish certain clinical features which would lead to a proper recognition, evaluation and therapy of this condition, so they made a study of 12 allergic children, two cases of which were cited. They found that five exhibited the clinical picture of the usual pneumonia. In seven cases, however, there was an afebrile period ranging from 6 hours to 5 days which was characterized by wheezing and dyspnea and by collapse. The infectious process may have originated upon an edematous hemorrhagic process of allergic origin.

In attempting to differentiate this type of pneumonia from other pulmonary lesions, they found the following clinical features to be of diagnostic values: the presence of an afebrile period with collapse and associated asthmatic symptoms, a lesser severity of the infection and a shorter duration than in the ordinary pneumonia and a relatively low white blood count at the onset of the febrile period.

To the clinician, the above observations are of definite importance, because they indicated that a history of pneumonia or "influenza" in an allergic child may be the result of an allergic pulmonary reaction, rather than that of a primary infection, ruling out the indication that the patient's asthma is of an infectious type. Moreover, in treating such "pneumonia," repeated small doses of epinephrine to combat the edema, removal of sensitizing agents, and measures usually advocated for combating edema, may be of paramount importance and may possibly constitute a life-saving procedure.

By Hugh Jeter, M.D.

The Enumeration of Blood Platelets. Isadore Olef, M.D., Boston, Mass. The Journal of Laboratory and Clinical Medicine, Vol. 20, January, 1935, No. 4.

In this, the author reviews the various methods of making blood platelet counts and gives the details of a method which he has found more satisfactory than others.

He divides various methods into direct and indirect. By direct method he includes those in which a dilution is made to eliminate other cellular elements. In consideration of this method he gives a table showing the names and results of 24 different authors. It is very interesting to note the variation of normal or average number of platelets per c.mm. given by different authors by different methods, ranges from one hundred thousand to one million.

By the indirect method he includes those in which dried smears are made and stained and by estimating the ratio of platelets to erythrocytes, the number of platelets is calculated. Here again he gives a table enumerating 27 authors and their results which range from one hundred fifty thousand to eight hundred sixty-eight thousand platelets per cu.mm. He refers to true indirect methods and modified indirect methods, and also gives interesting data on the size of the thrombocyte.

He concludes that the most accurate methods are the indirect, and gives his modification as one which has been satisfactory. By his method the platelet counts from thirty-eight normal persons, twenty-two males and sixteen females, were as follows: "The minimum count for the group was 437,000 platelets per cubic millimeter; the maximum, 586,000. The average for the group was 514,000 platelets per cubic millimeter; the average for males was 525,000, that for females was 504,000."

Comment: We must face the fact that platelet counts are not accurate. I agree that the simple indirect methods are the best. It is fortunate that extreme accuracy is not a clinical necessity.

Water Studies in Obesity. Elmer C. Bartels, M.D., Springfield, Ill., and Benjamin Blum, M.D., Rochester, Minn. The Journal of Laboratory and Clinical Medicine, Vol. 20, January, 1935, No. 4.

The authors refer to many important studies by different authors, which apply to water metabolism. He refers to the work of Pratt and Buck & Prager, who have concluded that in normal individuals the output of urine in four hours should be equal to or greater than the intake.

Janney and Walker, testing water balance in pregnancy, found that normal control subjects who had ingested 1,200 cc. of water eliminated 1,353 cc. in four hours, whereas during pregnancy the output declined progressively among clinically normal pregnant women in the last twelve weeks of pregnancy. He attributed this to a lower functional capacity of the kidneys in the latter weeks of pregnancy and considered this as a precipitating factor in toxemic stated.

Malmuc was the first to make studies in obesity. She reported a decrease in the output. The author reports a case of obesity and diabetes mellitus, 65 inches in height, female, 44 years of age, and weighing 265 pounds, whose dilution test (modified Volhard) yielded a total of 705 cc. of urine following a 1500 cc. intake. She was placed on a reduction diet and daily studies of weight, water intake and output



were made. "The total intake of fluid for the nineteen days in hospital was 22,090 cc. and the total output was 28,100 cc. The output exceeded the intake by 6,010 cc. (13 lbs.). If this is added to the actual weight (245 lbs.) a total of 258 pounds is obtained which is approximately two pounds more than the calculated weight of 265 pounds. This indicates that the forced weight loss was entirely at the expense of the body fluids and explains the reason for the ultimate outcome in which the actual loss and the calculated loss of weight are almost identical at the end of ten weeks."

One month afterwards the dilution test yielded 1910 cc. and the authors felt that "this excessive response was due entirely to the diuretic action of water." Thus there appeared to be an apparent benefit from the excessive intake of water in obesity.

From the single case as a suggestion of disturbed water metabolism, a further study resulted. 102 subjects were studied with weight and dilution tests: 7 underweight; 22 who were 0 to 10% underweight; and 32 who were more than 10% overweight. The results shown in tables are very interesting.

Their conclusions are as follows: "Disturbance in water balance does occur during attempts at reduction in weight in cases of obesity as is shown in literature and the case reported. In obese subjects who are not on diets, there is some slight evidence of retention of water as is indicated by the Volhard dilution test. This retention of water is more marked in overweight subjects. In obese subjects there is evidence of a sustained output, as indicated by the moderately high output of 119 cc. as against a normal output of 88 cc. in the fourth hour, as well as a slight reduction in total output. Obese subjects do not retain fluids to a great degree, as in only 7% was the output less than 1,000 cc. Underweight subjects have smaller total outputs in four hours than obese subjects."

### ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.  
717 North Robinson Street, Oklahoma City.

"Reconstruction of the Forearm After Loss of the Radius." R. Watson Jones, *British J. Surg.*, XXII, 23, July, 1934.

The Hey Groves operation was used on a girl of nineteen who had had a diaphysectomy for osteomyelitis. The operation consisted of implanting the distal end of the ulna into the small distal end of the radius. As a preliminary operation the inferior radio-ulnar dislocation was reduced to get rid of the prominent bulge at the lower end of the ulna.

The cosmetic results, as shown by the photographs, were excellent. There was, of course, complete loss of radio-ulnar movement. Wrist motion was 80 per cent of normal. With the aid of the shoulder muscles it was possible for the patient to obtain the full palm-down position of the hand and also to bring the palm up to the face and neck.

"Bone-Graft for Non-Union of the Carpal Scaphoid." Gordon Murray, *British J. Surg.*, XXII, 63, July, 1934.

An operation is described for use in non-union of the carpal scaphoid. The author does not state the time limit for union or whether the operation should be used in fresh fractures to prevent non-union. The

essential difference in the technique from that in use in other clinics is the passage of the graft through the fragments via a drill hole.

The incision is made along the radial surface of the wrist joint, extending one and a quarter inches upward and downward from the radial facet of the scaphoid, with the hand in full adduction. The tuberosity of the scaphoid is exposed by retracting the radial nerve and vessels and the abductor tendons of the thumb anteriorly and the extensor pollicis longus tendon posteriorly. A small area of the tuberosity is removed by rongeurs. A transverse incision is then made in the dorsal capsule of the wrist joint and the fracture line exposed. A five-sixteenths-inch bit is used to drill through the two fragments, starting in the rongeur area of the tuberosity. A piece of cortical bone from the tibia is passed through the drill hole. Great care is taken not to destroy any cartilage during the drilling and not to leave any overhanging graft.

Details of five cases are given with a note that four more have been successfully treated. These cases were operated on two, four, one, seven, and five months, respectively, after injury. In each case the hand was kept in a cock-up plaster for eight weeks, Bony union took place and there was complete restoration of function.

"Studies in Bone Sarcoma." II. Is New Bone Formation in Osteogenic Sarcoma the Result of a Local Supersaturation of Tissue Fluids With Calcium? Alexander Brunschwig and Paul H. Harmon. *Amer. J. Cancer*, XXII, 342, October, 1934.

The authors conducted experiments in which calcium in several forms was injected into a growing transplantable mesoblastic tumor of rats. There was no new bone formation in the tumor in any of the thirty-seven animals used in the experiments. From these findings the authors concluded that calcium itself is incapable of rapidly bringing forth osteoblastic properties in malignant mesoblastic cells which do not exhibit such properties under usual circumstances of growth.

This study is not a particularly convincing argument against the humoral hypothesis for new bone formation in osteosarcoma.

### SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
LeRoy Long Clinic  
714 Medical Arts Bldg., Oklahoma City.

The Present Status of the Sterility of Surgical Catgut Sutures. By Ralph Oakley Clock, M.D. *Surgery, Gynecology and Obstetrics*, February, 1935.

As a result of his finding virulent spore-forming anaerobic bacteria of the gas gangrene group in a batch of catgut sutures used in the operative wounds of five patients in a New York City hospital, and in whom gas gangrene that was fatal occurred—coupled with his recovery of the same organism from one of the fatal cases—a comprehensive study of the sterility of catgut was proposed by Dr. Frank L. Meleney. His aim was "that it shall not be possible for anyone to buy on the market catgut that is not absolutely sterile."

Later, Meleney and Chatfield submitted an effective test, of a bacteriologic nature, for the sterility of catgut and reported that the products of ten firms had been found sterile, while the sutures of seven firms

had proved to be non-sterile when subjected to this test.

In view of this excellent and comprehensive bacteriological study, it is most unfortunate that the Meleney and Chatfield technique was not adopted as a standard method to be enforced by some controlling authority.

For the purpose of determining the practical value of the Meleney and Chatfield test of the sterility of catgut, especially since it was proposed to establish the test as a standard, it seemed to the author highly desirable to apply this technique to a large number of lots of sutures of all of the American brands over a considerable period of time. He decided to undertake such investigation and, beginning early in 1930 and continuing each year thereafter, he purchased periodically in the open market several lots of sutures of each of the twelve American brands of catgut.

In the course of his investigation he found that it was necessary to make chemical analysis of some of the sutures before subjecting the lot to bacteriological examination; and he also emphasized the importance of using, as a preliminary step in the technique, suitable neutralizing fluids to dissolve and remove any chemical with which the sutures might be impregnated.

The author's summary and conclusions are as follows:

1. During a period of five consecutive years including 1930, 1931, 1932, 1933 and 1934, a total of 605 lots comprising 6,184 sutures and embracing twelve brands of American made catgut was subjected to a rigid bacteriological study. The products of Manufacturers A and F were found to be uniformly non-sterile in each of five consecutive years. Two brands, made by Manufacturers E and G, were non-sterile in three consecutive years, and then, after an interval of one year in which they were sterile, were again found non-sterile, thus being non-sterile in four non-consecutive years. One brand, marketed by Manufacturer I, was non-sterile in 1930, and then, after proving to be sterile in 1931, was found non-sterile in three consecutive years, thus being non-sterile in four non-consecutive years. The other non-sterile brand, the product of Manufacturer J, was non-sterile in two non-consecutive years.

2. Based on the results of this investigation, it seems fair to assume that all catgut manufacturers in America are not using the bacteriological test proposed by Meleney and Chatfield; or, if so, they are not employing the special neutralizing solutions recommended as a preliminary step in the technique.

3. Apparently, the publication of the results of Meleney's study of catgut sterility has had little or no effect in ridding the market of non-sterile sutures, for, during each of the five consecutive years since his preliminary report was made, non-sterile sutures have been marketed by several American catgut manufacturers.

4. The results of this extensive bacteriological examination of American made catgut sutures carried out over a period of five consecutive years, as herein described, have proved conclusively that the danger of non-sterile sutures still exists, thus jeopardizing the reputations of the surgical and hospital professions, as well as the welfare and life of surgical patients.

5. Adequate control of the sterility of surgical catgut in the United States of America by some recognized authority is of vital importance. It constitutes a serious problem, and one with which the surgical profession has been confronted for many years.

Comment: No one, whether engaged in surgery or not, can doubt the vital importance of this communication.

—LeRoy D. Long, M.D.

Surgery of the Diabetic. Preoperative and Postoperative Management of the Diabetic Subjected to Surgery. Walter E. Leonard, M.D., Los Angeles, California. The American Journal of Surgery, February, 1935.

Every patient with diabetes who is operated upon should be regarded as a candidate for coma, and its prevention is better than the cure. A high carbohydrate intake for a period of one week before operation should be the rule unless a surgical emergency arises. The carbohydrate intake varies with the individual patient, but should never be less than 100 grams in 24 hours and, if the patient is obese, should be as high as 225 grams. Insulin is used in any amount necessary to control any glycosuria which may arise.

When the patient returns from the operating room, he should receive approximately the same amount of insulin in 24 hours which he was receiving on his regular diet. Glucose should be given in amounts equal to his sugar producing intake on his regular diet. Insulin should be given in small repeated doses so that at least 75 grams of glucose are metabolized every 24 hours in the average patient, but in the obese 150 grams of glucose should be metabolized. All urine is tested for the presence of sugar and diacetic acid. The plasma CO<sub>2</sub> combining power is estimated whenever there is any clinical evidence of acidosis. If the acidosis is under control and symptoms of alkalosis occur, namely, prostration and tetany, a close check should be kept of the CO<sub>2</sub> capacity of the blood. The slightest acidosis or alkalosis must be combated vigorously.

The surgeon should bear the brunt of responsibility in operating on diabetic patients.

The proper selection and judicious administration of anesthetics, good surgical technic that avoids unnecessary trauma, and delay, contribute greatly to reducing the operative risks of diabetics in surgery.

Patients with diabetes who undergo operation are very susceptible to acidosis, but this danger can be practically eliminated by frequent urinalysis and proper treatment.

The healing of operative wounds is somewhat delayed due to the peculiar lack of resistance to skin infections even in well controlled diabetics. The healing of chronic ulcers or indolent wounds requires the closest application of surgical technic plus control of sugar metabolism. Most patients with diabetes, particularly those requiring surgical procedures, are advanced in years, overweight and suffering from circulatory disturbances and other degenerative lesions which, of themselves, make the surgical risk serious.

In view of these considerations the author thinks that the patient who requires surgery should be under the control of the operating surgeon in a well managed medical center, in cooperation with internist, intern, laboratory and dietitian. In emergency surgery, delay in transporting patients to the medical center is often fatal and the surgery should be performed as quickly as possible by the first available surgeon, whose results will be satisfactory if he guards against acidosis and alkalosis.

—LeRoy D. Long, M.D.



Comparison of the Urinary Tract in Pregnancy and Pelvic Tumors. By Edgar C. Baker, M.D., and John S. Lewis, Jr., M.D. The Journal of the American Medical Association, March 9, 1935, pages 812 to 816.

This report is based upon the fact that studies of the urinary tract by intravenous dyes have revealed a high degree of dilation of the upper urinary tract in pregnancy. This dilation has been shown to be more marked on the right side. In keeping with the reports of others, these authors in their own series had right-sided dilation in 92 per cent and left-sided dilation in 52 per cent. They do not give the number of patients so examined but remark that they included all of the presentations and positions of the fetus as well as twin pregnancies.

Since the stasis thus demonstrated helps to explain the reason for the frequency of pyelitis or urinary infection in pregnancy, these authors attempt to find the explanation for the dilation. They note the various causes as listed in the literature as: (1) mechanical factor; (2) hormonal factor; (3) increase in bile salts, attended with hypertrophy of the lower ureters, and (4) congestion of the lower ureters associated with increased blood supply to the pelvic organs.

They believe that the mechanical factor is of prime importance and they further think that the sigmoid plays an important part in protecting the left ureter and probably is the cause of torsion of the uterus with resultant increased pressure on the right ureter. This possibility was first brought to their attention by a postmortem examination where they found that on the left side the sigmoid formed a soft cushion between the uterus and the pelvic brim. They further investigated this point by introducing barium solution into the rectum and taking x-rays while the urinary dilation was well visualized by the intravenous dyes.

They also report 16 cases of uterine fibroids and ovarian cysts of a size comparable to that of pregnancy. In all of these cases they found real dilation of the upper urinary tract and in all cases in which the left side was dilated, the right side showed greater dilation. This was in spite of the fact that three of the ovarian cysts arose from the left side.

They therefore feel that the common factor in dilation of the upper urinary tract in such diverse conditions as pregnancy and large pelvic tumors of pelvic origin is a mechanical one. They feel that hormonal and metabolic factors can hardly be the same.

Comment: Many patients with large pelvic tumors, either fibroids or ovarian cysts, will show urinary tract infections and pyelitis. Even though the tumor has been present for a considerable length of time it will also be recalled that many of these patients will soon be relieved of their urinary symptoms when the tumor has been removed. It has been a fact observed by urologists and gynecologists at numerous times that pressure in the pelvis from various pelvic pathological conditions will cause slight dilation of the upper urinary tract and urinary tract infections. Though occasionally the pelvic pathology seems inadequate to account for the urinary symptomatology, its correction will not infrequently control urinary tract infections, or symptomatology. It is consequently with considerable interest that we observe such reports as this one based upon the use of intravenous dyes in large series of cases, where apparently the mechanical factor of pelvic pressure is sufficient to cause temporary or permanent dilation of the upper urinary tract with symptomatology or infection or both.

—Wendell Long, M.D.

## WHICH SIDE OF THE QUESTION ARE YOU ON?

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OR

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## JEJUNAL ULCER

Roscoe R. Graham and F. I. Lewis, Toronto, Ont. (Journal A. M. A., Feb. 2, 1935), base their remarks on jejunal ulcer on their observation of forty-three cases, of which a careful and exhaustive follow up of the patients who have been submitted to a gastro-enterostomy shows a much higher incidence of jejunal ulceration than is usually suspected. A persistent gastro-intestinal disability in a patient who has had a gastro-jejunostomy demands a careful and thorough investigation. Roentgen investigation of such patients is more efficient if the clinician and radiologist co-operate as a team. Jejunal ulceration is a surgical lesion, and operation should be urged as soon as the patient's condition permits, provided the diagnosis is thoroughly substantiated. Block resection of the stomach and jejunum, with end-to-end anastomosis of the jejunum, and either a Billroth I or retrocolic Polya reconstruction of gastric continuity is the ideal procedure. A barium enema should be a routine procedure in the investigation of any patient suffering a gastro-intestinal disability after a gastro-enterostomy. The ideal operation for a gastro-jejuno-colic fistula is a block resection of stomach, jejunum and colon, with triple anastomoses, together with a cecostomy.

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# PRESENT STATUS OF TETANUS, WITH ESPECIAL REGARD TO TREATMENT: REPORT OF FURTHER CASES FROM THE MASSACHUSETTS GENERAL HOSPITAL

Richard A. Miller and Horatio Rogers, Boston (Journal A. M. A., Jan. 19, 1935), report thirty-three additional cases of tetanus from the Massachusetts General Hospital, making a total of 149 cases. Since 1896, when antitoxin was first used, the mortality has declined from 80 to less than 47 per cent. Prophylactic injection of antitoxin (1,500 units) is indicated in cases of deep or puncture wounds that may be contaminated. In unusually suspicious cases this should be repeated once or even twice at intervals of ten days. The wound should, when possible, be debrided and kept open. After the onset of tetanus, every effort should be made to conserve the patient's strength by the maintenance of nutrition and fluid balance, and by the combating of muscle spasms. Tribrom-ethanol is a useful drug for the control of spasms. As soon as the diagnosis is made, serum should be given intravenously, intramuscularly or both in daily doses of from 20 to 80 thousand units up to a total of 300 thousand units. In hypersensitive subjects the process of desensitization must be instituted as soon as possible. There are no theoretical or practical grounds for the recommendation of the intraspinal administration of antitoxin. Serum reactions may be expected in about one-third of all cases treated. The immediate reactions are commonest from two to five days after the initial dose of serum, and the delayed reactions from the tenth to the fifteenth day. No fatal reactions were encountered in the present series.

## RECENT PROGRESS IN TREATMENT OF PLUMBISM

According to Irving Gray, Brooklyn (Journal A. M. A., Jan. 19, 1935), the administration of a diet low in calcium and the addition of either ammonium chloride or phosphoric acid definitely causes an increased excretion of lead. The addition of a diet high in phosphorus aids in the excretion of the lead. In several cases of chronic plumbism the lead in both the urine and the feces was increased in amount after phosphate therapy was instituted. Experimental and practical experience bears out Shelling's opinion. The addition of a high phosphorus, high calorv diet with sufficient vitamin content improved the general appearance; the nutritional requirements were adequate and the rate of excretion of lead was maintained. In the "deleading" treatment of his patients the author is now using the low calcium, high phosphorus diet with a ratio of 1-3 and 1-4. In persons who have absorbed lead it is possible that waves of liberation

occur from time to time and produce symptoms of clinical activity. The lead that has been absorbed and is released at certain periods can be much more readily excreted at stated intervals with this type of treatment. Although complete "deleading" is not possible, as demonstrated experimentally, nevertheless it is reasonable to assume that the lead excreted is a large fraction of the lead that has been absorbed. The "deleading" treatment may have to be repeated at intervals if there is evidence of continued excretion of abnormal amounts of lead. It is advisable that all patients undergoing "deleading" treatment be hospitalized. The failure of acute toxic symptoms to develop when there is increased excretion is further proof of the fact that there is no parallel between the absorption and excretion of lead and the toxic manifestations. The estimation of lead in the excreta is of aid only in proving whether or not abnormal amounts of lead have been absorbed.

## CONTROL OF LEAD POISONING IN THE WORKER

On the basis of his experience Elton L. Belknap, Milwaukee (Journal A. M. A., Jan. 19, 1935), concludes that: 1. The control of lead poisoning by medical supervision is a highly specialized form of work, although it requires the broad background of internal medicine. 2. One must still have a workable course of scientific treatment of lead poisoning to care for workers until the engineers have made lead absorption impossible. 3. A clinically proved and detailed method for the control of lead poisoning in the worker at work is presented, which consists of a stringent pre-employment examination by the physician himself, periodic reexaminations at least every two weeks to three months, according to the intensity of exposure. Included in the periodic reexaminations there must be a record of laboratory studies, whenever a man is reexamined, a hemoglobin and a stipple cell count must always be made and the results on the periodic examination must be analyzed frequently by the medical consultant so that treatment may be changed immediately, if necessary, and recommendations made for further precautions against exposure. 4. One should not wait for disability before one starts treatment. 5. Thoughtless and wholesale calcium treatment may be unwise, but when given advisedly it is of specific aid. 6. Even the so-called insusceptible workers may have relatively large quantities of stored lead ready to be liberated by natural or artificial means. 7. With perfectly controlled technic, in selected cases, artificial deleading of cases previously heavily loaded with lead is a benefit not only to industry but also to the worker, and it is safer than uncontrolled spontaneous deleading.

## REPORT OF EXAMINATION FOR LICENSES TO PRACTICE MEDICINE

Examination held at State Capitol, Oklahoma City, March 12th and 13th, 1935. The following applicants passed:

Name	Year of Birth	Place of Birth	School of Graduation	Year of Graduation	Home Address or Previous Location
Lee, Robert Ray	—	Dublin, Tex.	Univ. of Okla.	33	Okla. City
Pryor, Victor W.	08	Konawa, Okla.	Univ. of Tenn.	33	Holdenville, Okla.
Shelton, Joel	02	Granite, Okla.	Univ. of Okla.	34	Temple, Tex.
Burke, Richard Michael	03	Langdon, N. D.	Univ. of Minn.	30	Sulphur, Okla.
Casebeer, Harvey Lee	07	York, Neb.	Univ. of Nebr.	33	Alva, Okla.
Howard, Robert Lowe	97	Indianapolis, Ind.	Western Reserve	28	Okla. City
Hudson, Margaret Grove	97	Anandale, Pa.	Johns Hopkins	24	Tulsa, Okla.
Stuart, Frank Allan	04	Jackson, Miss.	Univ. of Tenn.	30	Tulsa, Okla.
Guthrie, Oscar Vanonda	86	Townley, Ala.	P & S Little Rock	10	Roff, Okla.
Walker, David A.	74	Carthage, Ill.	Keokuk Med. Col.	02	Mullen, Nebr.
Lindgren, Russell Cyrus	07	Stillwater, Minn.	Univ. of Minn.	32	Guthrie, Okla.
Dunham, Howard Conner	01	Ceres, Okla.	Tulane Univ.	30	Sulphur, Okla.
Nauheim, Herbert Sally	1900	Darmstadt, Ger.	Heidelberg Univ.	23	Tulsa, Okla.
Navin, Kenneth William	07	Mitchell, S. D.	Creighton Univ.	33	Konawa, Okla.
Schuman, Irving	07	Chicago, Ill.	Univ. of Ill.	34	Tulsa, Okla.



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# THE JOURNAL

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## PRESENT TRENDS IN MEDICAL EDUCATION

LEWIS J. MOORMAN, M.D.  
OKLAHOMA CITY

The history of medical education in this country constitutes a most interesting evolution toward university discipline and standards. Many of the early physicians were true sons of the mother of invention. Obvious community need prompted socially minded young men to seek the only available plan of medical education, namely, the preceptor plan. Fortunately medical education comes not only from those who profess to teach, but, in equal degree, from those who practice. A certain amount of reading, careful observation, close association with the master, and a generous participation in his daily routine, resulted in a surprising degree of efficiency in the art of medical practice. Purely scientific training was utterly wanting.

The earliest physicians in the American colonies were usually clergymen pursuing medicine as a companion profession. In England, this was considered desirable for service in the church. Such a combination in the preceptor constituted a splendid background for the student, who found it necessary to cope with conditions in a new country with a rapidly expanding population, virtually devoid of facilities for the care of the sick. Under such conditions, spiritual solace was often sorely needed. There were practically no university opportunities, such as existed in European countries, and no available hospitals organized for medical training. Consequently, the preceptor manfully met the pressing need.

Early in the nineteenth century, 90 per cent of the physicians in this country were practicing without degrees from medical schools, and less than 20 per cent had ever attended medical lectures. In spite of this

condition, there was no lack of vision and ambition. Medical societies were organized and standards were evolved with the purpose of differentiating between the competent and incompetent in the practice of medicine.

Since there were no medical schools to standardize, they set about to fix standards for preceptor training and required examinations for membership in the respective medical societies. Membership in the medical societies carried the privilege to practice, and in some states such organized bodies were authorized to grant the degree of medicine.

Because of the growing demand for doctors, groups of physicians in various centers secured legislative authority to conduct medical schools and confer degrees. Unfortunately, political and commercial influences, and occasionally personal ambitions, insidiously penetrated these endeavors, and, as a consequence, we have had in this country and Canada a total of approximately 460 medical schools. In 1800 there were only five schools, the Transylvania College at Lexington, Kentucky, being the only one west of the Alleghenies. In 1860 the number had increased to 66; during the Civil war 20 of these were closed, but by 1900 we had 160 schools in operation.

The schools endeavoring to maintain high standards and university principles and ideals, were greatly in the minority. Fortunately, in the early part of the 19th century ambitious young American physicians were attracted by the educational advantages in European universities. The pursuit of pure science in European laboratories and the rapidly developing modern methods of clinical investigation and



clinical teaching sent the science and art of medicine forward with a bound. Many of our young men in the profession of medicine, after one to three years in Europe, returned to this country to become leaders, not only in the practice of medicine, but in the teaching of medicine.

Outstanding among these were: Oliver Wendell Holmes, Elisha Bartlett, Benjamin Rush, William Shippen, John Morgan, William Pepper, Henry Pickering Bowditch, C. J. Gerhardt, Alfred Stille, William Power and Austin Flint.

From this time on we find rapid progress in the development of modern medicine, accompanied by a growing interest in the teaching of medicine. As a consequence our present standards of medical education have gradually evolved. The first national conference for the purpose of standardizing medical education was called in 1846. At the second meeting, in 1847, the name of the American Medical Association was adopted. In 1891 the Association of American Medical Colleges was organized. As early as 1892 Harvard Medical School required a course of four years; the Johns Hopkins Medical School, with similar standards, was founded in 1893; in 1899 a graded curriculum was adopted; in 1900 the American Medical Association gathered and published medical school statistics; in 1904 the Council on Medical Education was established by the American Medical Association. Since 1905 the members of this organization have assembled in annual conferences; the membership is composed of delegates from the various associations and universities interested in medical education.

Minimal standards of medical education were established. All medical schools in the United States were soon inspected and classified. In 1909, 100 medical educators and practitioners constituted a Committee on Medical Curriculum; however, it was the unanimous opinion that a uniform curriculum for all medical schools was not desirable and not in the best interest of medical education. Nevertheless, a suggestive curriculum was presented for the purpose of enabling medical colleges and state licensing boards to at least establish minimal standards. By 1900 approximately 28 medical schools were requiring two or more years of college work for admission, and 22 were requiring one year of college work following graduation from high school.

Thanks to the Carnegie Foundation for

the advancement of teaching, Mr. Abraham Flexner's valuable report on medical education in the United States and Canada was made available in 1910. Through this commendable gesture valuable publicity resulted, and in many instances philanthropists were inspired to spend money for the advancement of medical education along university lines. The accepted standards received legal recognition in many states. These requirements, in turn, forced many lagging medical schools to meet the rising standards of medical education. As a consequence, the less worthy proprietary, or commercial schools, were forced to close their doors. In the United States we now have 76 medical schools with a minimal requirement of at least two years preliminary college work, some require three years and several demand a college degree for admission.

I have presented this brief survey of medical education in this country with the hope of securing a better understanding of present trends in medical education. The fundamental principles involved in modern medical education are as old as the history of medicine. William Osler, referring to the work of Hippocrates, the father of medicine, makes the following statement: "Everywhere one finds a strong, clear common sense which refuses to be entangled either in theological or philosophical speculations. What Socrates did for philosophy, Hippocrates may be said to have done for medicine. As Socrates devoted himself to ethics and the application of right thinking to good conduct, so Hippocrates insisted upon the practical nature of the art, and in placing his highest good in the benefit of the patient. Empiricism, experience, the collection of facts, the evidence of the senses, the avoidance of philosophical speculations, were the distinguishing features of Hippocratic medicine."

Not only did Hippocrates lay a secure foundation for the science of medicine, but he established for all time, within that science, the essential principles of moral and ethical conduct.

Gomperz, in his comprehensive work, "Greek Thinkers," refers to the Hippocratic oath as a monument of the highest rank in the history of civilization." May we, with pardonable pride, point to the fact that Gomperz, in the first volume of "Greek Thinkers," after discussing in Book 1 "The Beginnings," and in Book 2 "From Metaphysics to Positive Science,"

he designates Book 3 "The Age of Enlightenment," and chooses "The Physicians" as the title of his first chapter.

In discussing the supremacy of the Hellenic mind, Gomperz goes on to say: "We may trace the springs of Greek success achieved and maintained by the great men of Hellas on the field of scientific inquiry to a remarkable conjunction of natural gifts and conditions. There was the teeming wealth of constructive imagination united with the sleepless critical spirit which shrank from no test of audacity; there was the most powerful impulse to generalization coupled with the sharpest faculty for descrying and distinguishing the finest shades of phenomenal peculiarity; there was the religion of Hellas, which afforded complete satisfaction to the requirements of sentiment, and yet left the intelligence free to perform its destructive work; there were the political conditions of a number of rival centres of intellect, of a friction of forces, excluding the possibility of stagnation, and, finally, of an order of state and society strict enough to curb the excesses of 'children crying for the moon,' and elastic enough not to hamper the soaring flight of superior minds. At the point of development to which we have now attained, it was chiefly the critical faculty which advanced with great strides, and which stood in need of ever-new reinforcement. We have already made acquaintance with two of the sources from which the spirit of criticism derived its nourishment—the metaphysical and dialectical discussions practiced by the Eleatic philosophers, and the semi-historical method which was applied to the myths by Hecataeus and Herodotus. A third source is to be traced to the schools of the physicians. These aimed at eliminating the arbitrary elements from the view and knowledge of nature, the beginnings of which were bound up with it in a greater or less degree, though practically without exception and by the force of an inner necessity. A knowledge of medicine was destined to correct that defect, and we shall mark the growth of its most precious fruits in the increased power of observation and the counterpoise it offered to hasty generalizations, as well as in the confidence which learnt to reject untenable fictions, whether produced by luxuriant imagination or by *a priori* speculations, on the similar ground of self-reliant sense-perception."

So we find that out of the dead language of a great people comes the fascinating

story of a living science. In the fifth century before Christ, the fundamental principles of modern medical education were clearly stated with a frank intellectualism and an insatiate yearning for truth. Medicine had thrown off the veil of mystery and was ready to submit every problem to the law of reason. Aristotle accepted the straightforward methods of clinical observation laid down by Hippocrates and added the fundamental principles of scientific investigation. All modern educational accomplishments are based upon these fundamental principles, though at times they are almost lost in the bewildering growth of physical equipment. We find them running through all departments of the medical school, dominating every advance in medical knowledge. In the following brief quotation, President Elliot has merely restated the above principles: "The problem is to get students to weigh evidence, draw accurate inferences, make fair comparisons, invent solutions, and form judgments; this is the serious problem in all education of efficiency."

Having set forth the fact that medical education in this country is now carried on in standardized medical schools, many of which are integral parts of state universities, and having referred to the fundamental principles and methods of medical education, we are now ready to consider briefly present trends in medical education.

Though we strive to choose only those who are spiritually, temperamentally, morally, and intellectually qualified for admission to our medical schools, we are often quite conscious of our limitations, and each year the mortality in our freshman classes proves that our methods are imperfect. This consciousness of our inability to adequately appraise the students' fitness for the study of medicine, has led to the wholesale application of the aptitude test. Even this has failed to satisfactorily supplement our standard methods. At any rate, the present trend is toward more careful selection with a continued search for more effective methods of appraisal. On account of the increasing number of applications, and the over-supply of physicians, many schools are attempting to cut down the number of admissions. Aside from the vital question of supply and demand, it is desirable, from an educational standpoint, to avoid over-crowding and over-taxing the physical facilities of a given medical school.

The present trend in the *preclinical* de-



partments is toward more careful cooperation with the *clinical* departments, in order that thought may be translated into action, and that anatomy, physiology, biochemistry, pathology, histology, and bacteriology may be definitely identified with the human organism in health and disease. Research in the preclinical departments should be encouraged. The teaching and the organization of the work in the department should be such as to inspire action and to stimulate original investigation.

The student of medicine should be burdened only with applied knowledge, or knowledge subject to practical application. Emerson has said: "The office of the scholar is to \* \* \* guide men by showing them facts amidst appearances." Claude Bernard beautifully expressed the same thought as follows: "Yet we shall reach really fruitful and luminous generalizations about vital phenomena only in so far as we ourselves experiment, and, in hospitals, amphitheatres, or laboratories, stir the fetid or throbbing ground of life." Again, he says: "If a comparison were required to express my idea of the science of life, I should say that it is a superb and dazzling lighted hall which may be reached only by passing through a long and ghastly kitchen."

In the clinical departments we are stressing the need of bedside instruction under the guidance of carefully chosen teachers whose function it is to take students in small groups and direct them in the intricate, yet fruitful, methods of clinical investigation, diagnosis, and rational therapy. This is not a new method, as the following will attest. In 1664 Franciscus Sylvius gave the following account of his clinical methods:

"I have led my pupils by the hand to medical practice, using a method unknown to Leyden, or perhaps elsewhere, i. e., taking them daily to visit the sick at the public hospital. There I have put the symptoms of disease before their eyes; have let them hear the complaints of the patients, and have asked them their opinions as to the causes and rational treatment of each case, and the reasons for those opinions. Then I have given my own judgment on every point. Together with me they have seen the happy results of treatment when God has granted to our cases a restoration of health; or they have assisted in examining the body when a patient has paid the inevitable tribute to death."

With the necessary increasing tendency toward specialization in medicine, and the multiplicity of mechanical aids and laboratory tests in connection with diagnosis and the highly technical methods of treatment, the study of disease at the bedside is very apt to be neglected by the average medical student unless something is done to fix his attention on clinical medicine.

We insist that laboratory work should follow, and not precede, thorough history taking and a searching physical examination. Otherwise, laboratory procedures cannot be intelligently employed and properly interpreted. We also demand that the art of medicine should not be overlooked. With the passing of the preceptor plan, the cause of medical education suffered a great loss. The above methods of instruction, plus the clinical clerkship plan, represent efforts to compensate this loss. We are trying not only to preserve that phase of the plan having to do with bedside observation, but also that delicate intangible human phase which means so much to the patient.

In spite of the revolutionary influence of a mechanistic age, human nature remains the same, ultimate human needs are no less genuine than they were in the days of long ago. The patient still needs a physician who is willing to sit at the bedside and bring to bear a sympathetic, intelligent, application of medical knowledge to the patient's individual problems; a physician who realizes that the human organism is still intact, constituting an integral part of society, possessing a human personality, and having the right to demand consideration as a composite whole.

Pursuing this policy, we have discarded many of the didactic lectures, especially those which gave the student only what he could find in the textbooks. Likewise we have discontinued many of the surgical clinics and the large amphitheatre medical clinics. The surgical clinics are replaced by bedside studies in surgical diagnosis and surgical aftercare. Special emphasis is being placed upon the teaching of preventive medicine and the necessity of creating a sense of responsibility with reference to public health, hygiene, and social welfare.

With an ever-widening field to cultivate, we insist upon teaching only the fundamental principles and methods necessary to make good doctors of medicine; general practitioners adequately qualified to take care of the 80 per cent suffering from

the common ills of humanity and equally capable of intelligently referring the remaining 20 per cent who may be in need of highly specialized care.

Undergraduate medical education is not designed for the purpose of turning out specialists in any line. The present trend is toward the establishment of minimal educational standards for the various specialties which must be satisfied through experience and graduate work before recognition is granted. In all departments of the schools offering undergraduate medical education, we are stressing the importance of personal contact between teacher and student; of daily, or at least consecutive, period estimates of the character and quality of the student's work, and corrective efforts where defects are noted. As a result, we are materially reducing the number of final examinations. All this, with a view of awakening latent ambitions, encouraging initiative, stimulating investigative and creative tendencies, bringing to a high level the common

power of accomplishment, and perhaps occasionally discovering genius.

We are trying not to shackle the vehicles of thought with the heavy harness of fixed routine, not to enslave the mind through the demands of inviolate systems which tend to smother originality. It is gratifying to note that present trends in medical education are placing emphasis upon cultural values. The history of medicine is commanding an ever increasing interest and supplying not only incentive and inspiration, but proving a powerful antidote to dogmatism and self-complacency. Finally, when we consider the responsibility of dealing with the intricate functions of the human mind and body, in health and disease; played upon by all the intangible hereditary factors and influenced by an ever-changing environment constantly increasing in its complexity, we feel that the doctor should learn, "above all, to walk gently in a world where the lights are dim and the very stars wander."

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## TREATMENT OF LIVER DISEASES\*

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It is quite obvious to everyone that the treatment of hepatic disease today remains in a very unsatisfactory state. The more recent accumulation of information regarding liver physiology has helped us to a better understanding of liver disease but for some reason our therapeutics have not kept pace with this knowledge. Liver function tests of today are only of limited value because the different functional tests are limited to one particular function and the actual functions of the liver are numerous.

This is further complicated by the fact that the liver, like the kidney, is an organ of very considerable reserve power; that it is capable of carrying on the necessary physiological function without appreciable or detectable changes. When enough is destroyed to produce detectable changes either by clinical or laboratory methods it is

practically too late to obtain an appreciable beneficial therapeutic influence by any measure known in our present therapeutic armamentarium.

It is easy to understand why death should occur in acute yellow atrophy, but what of the cases that go into subacute stage? Will cirrhosis ultimately be the outcome? What about the case with focal necrosis of liver substance? What about the cases that develop acute hepatitis and then apparently recover completely? In all of these cases with definite liver cell degeneration or focal necrosis it is conceivable that a certain number will show repair and absorption of necrotic areas with fibrosis that ultimately might lead to occlusion of the vascular or biliary tract and thus produce cirrhosis.

When, however, the stage of cirrhosis has been reached our therapeutic efforts are so futile that we can only treat the case symptomatically. It becomes necessary,

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therefore, for us to direct our main therapeutic efforts toward prophylactic and hygienic measures for the prevention of severe liver damage.

The liver is susceptible to injury from infections and certain toxic substances; among the latter may be mentioned such chemical substances as phosphorus, chloroform, phen-hydrazine, trinitrotoluene, trichlorethane, carbon tetrachloride, cinchophen, dinitrophenol, etc. There is sufficient evidence at hand to severely condemn the use of a substance such as cinchophen or other quinoline derivative (a preparation in common use is atophan). Not alone is their prolonged use potentially dangerous, but it has been known to produce fatal liver damage when taken over relatively short periods of time. The more recent introduction of dinitrophenol for reduction cures by its effect on metabolism has added another dangerous drug as the accumulating reports of disastrous fatal results finds its way into medical literature.

Arsphenamine jaundice, while not frequent, is sufficiently important to warn the physician to be on guard as to the toxic effect of arsenic on the liver in some cases. The frequency of alcohol as the common etiological factor in portal cirrhosis has probably been considerably over-estimated in the past, yet clinical experience over many years indicates a definite relationship in a great many cases.

Certain infections may produce acute hepatitis or liver damage which may go on to permanent injury. Among these acute infections may be mentioned malaria, scarlet fever, septicemia, pyemia or chronic suppuration, eclampsia or the toxemia of pregnancy. Typhoid fever and certain other infections have been known to cause localized necrosis of the liver. Foci of infection in the biliary tract or appendix may produce damage to liver substance.

Suffice it to say that the very reason that damage to the liver may conceivably occur from many sources makes it difficult for the clinician to segregate those cases of actual early liver damage that may ultimately lead to liver cirrhosis or at least hepatic insufficiency. This may be of considerable importance to such a patient because in later life he may develop some serious illness which will tax his various organs to the utmost. Should a damaged liver be present it might materially influence the outcome of his illness. However, we are drifting in the

realm of the speculative and had better stick to known facts.

From a general hygienic and dietary standpoint in treatment of liver disease it should be remembered that high sugar and high carbohydrate food intake is indicated. This improves the nutrition and resistance of the liver cells, according to Whipple's experimental work. Whether the protein should be restricted, is a question; some experiments seem to indicate a definite relationship between protein metabolism and the liver.

In those cases of liver disease with obstructive jaundice the normal emulsification of fats by the acids does not take place when bile is absent from the intestines, hence fats are poorly tolerated by these patients.

Functional disturbances of the liver without definite pathologic changes in liver cells may occur but the so-called "bilious" attacks are probably more a result of intestinal absorption and need not concern us here. Acute catarrhal jaundice is a self-limited disease and one merely needs to guide the patient through his illness by directing his diet and other simple measures. The important thing is to be correct in our diagnosis of a supposed case of acute catarrhal jaundice. The few cases of acute catarrhal jaundice that may occasionally go on to acute yellow atrophy and death are probably improperly diagnosed.

Syphilitic disease of the liver may occur in the secondary stage of syphilitic infection or in chronic or tertiary stage. When it occurs in secondary stage it usually manifests itself by a definitely palpable liver with sudden jaundice. The tertiary stage may occur as a diffuse fibrosis or as a gummatous lesion with cicatrices, with or without some jaundice. In either case we must remember that there has been extensive damage to the liver cells and the immediate use of arsenic in forms of arsphenamine or other preparations arsenical is not advisable; not only that, but such a diffuse syphilitic hepatitis may develop into an irremedial liver cirrhosis. Most authorities believe that we should begin the treatment by potassium iodides by mouth, and mercury by inunction, over several months time. This allows replacement fibrosis to occur more slowly and give more time for the development of collateral circulation. Some even go so far as to avoid using mercury by inunction

for several months and use only a combination of mercury and iodides by mouth.

Later, when the liver edge has receded considerable mercury by inunction is started. Still later, or after several months, various arsenical preparations may be cautiously started.

We shall not attempt to deal with the medical or non-surgical treatment of disease of bile passage, but we all know that when a jaundiced patient needs to be operated the jaundice adds considerable to the risk of the operation.

There is a distinct susceptibility in all obstructive jaundiced patients to bleeding or oozing after an operation. The exact cause of this tendency to bleeding is not well understood, but several theories have been postulated. It is natural to think that a deficiency of one of the clotting elements is at fault or produces this abnormal mechanism of coagulation, but each theory postulated has been practically abandoned,

One of these—the calcium theory—was strongly advocated, but this also has not proven tenable. Repeated analysis has shown that the total and available serum calcium of jaundiced subjects usually falls within normal limits.

Recent reports by Carr and Foot, and Mueller, Sturgis and Sommers, call our attention to the possible relation of amino acid-cysteine to this abnormal or impaired clotting. Preliminary studies demonstrated that the addition of minute amounts of cysteine to normal blood shortened the coagulation time and changed the clot to a large friable, non-retractile mass closely resembling that formed by the blood of jaundiced human subjects. It would seem, therefore, that cysteine, or perhaps some related mercaptan, is intimately related to clottings in obstructive jaundiced patients. While they have investigated with some drugs, usually brombenzene, it must be recognized that brombenzene is a rather toxic drug. The brombenzene combines with cysteine to form bromphenyl-mercaptopuric acid, excreted in urine. An editorial in A. M. A. of September 29th suggests to us that while the use of this drug is still in experimental stage it should be remembered that protein is the metabolic precursor of cysteine and related mercaptans and therefore might well be avoided or cut down to a minimum in the diet of patients with obstructive jaundice.

The use of calcium chloride, more especially calcium gluconate for three days,

preoperatively, may not be on sound therapeutic basis but cannot be entirely ignored for the present. In our hands a small transfusion or repeated small transfusions has given the best consistent results. It should be used early and frequently, if necessary. A preoperative transfusion has been used in some cases where conditions seem to have warranted its use.

The jaundiced patient, whether from obstructive jaundice or biliary cirrhosis, frequently complains bitterly of the persistent itching or pruritis which so often accompanies the jaundice. It interferes very materially with his rest and sleep and he greatly welcomes any relief from this annoying symptom. The usual measures used for its inhibition are generally unsuccessful. If these ordinary measures for its relief are unsuccessful, one might try calomel as recommended by Eppinger. The calomel is given in one-fourth to one-half grain dosage every half hour until one to two grains have been given. Such a course may be given daily for three or four days per week.

Hemorrhage from esophageal varices due to cirrhosis usually occurs after the patient has developed ascites and the diagnosis of cirrhosis is fairly certain. It must be remembered that they may occur, however, at times months or even years before ascites appears. Medical treatment has no cure to offer for the recurrence of this condition, but it may be that in time to come it will be found to lend itself to some surgical procedure.

The other much more serious although not so common is the danger of death from "so-called" liver insufficiency. It is conceded, I think, by most clinicians that damage to the liver is often extensive and very severe in these cases of obstructive jaundice.

Two types of toxemia may follow operative procedure for obstructive jaundice. In the first type the secretion of bile and urine is diminished with resulting increase in blood urea and bilirubin. The other manifests itself by a very profuse flow of bile with subsequent dehydration, exhaustion and collapse. It therefore becomes necessary to see that the patient gets an abundance of water and also glucose. The method of administration and amounts depending on the individual case.

The presence of ascites in cirrhosis of the liver is the thing which brings most of these cases to the physician for the



first time. In the past the only therapeutic effort of any consequence, so far as definite results were concerned, was paracentesis. Efforts, of course, had been made since ancient times to get rid of the fluid by medical means. It was not, however, until the modern combination of mercury of ammonium salts that "medical tapping" by this means was successfully practiced. The first really successful mercurial preparation used was the organic mercurial diuretic merbaphen or novarsurol, introduced by Paul Saxl, Robert Heilig, in 1920.

The patient is given ammonium by mouth in good sized doses and the mercurial preparation novarsurol, or the still newer preparation Salyrgan. This mercurial preparation may be given either deep intramuscularly or intravenously. The dosage is 1 cc. for the first injection and the preference is for intravenous injection. After the first dose 2 cc. are given and repeat at intervals of 3 to 5 days. The diet should enforce some fluid restriction

—800 to 1000 cc.—and low in basic ions, particularly sodium.

This treatment will produce effective diuresis in at least 75 per cent of cases if persistent and will serve to keep the ascites under control in most cases. Even should one tapping become necessary at the beginning of treatment it should be persisted in for some weeks as the treatment may become much more effective than the first two weeks of treatment might indicate. Toxic effects are not likely to occur from the mercurial Salyrgan unless there is evidence of considerable kidney damage, when of course it would be contra-indicated.

If fair results are obtained by the above methods they should be continued so long as effective diuresis continues. Sooner or later a gradual diminution in response to treatment occurs. This is of grave prognostic significance and usually indicates the approach of terminal hepatic toxemia.  
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## A GENERAL CONSIDERATION OF ACUTE INTESTINAL OBSTRUCTION\*

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Intestinal obstruction or ileus occurs when, for any reason, there is a stoppage of the intestinal content past any given point. The condition, if unrelieved, is invariably fatal. If the obstruction be incomplete or temporary, spontaneous relief and recovery should occur. Certainly, however, in cases of complete mechanical obstruction, no such outcome can be expected. Under such conditions, the patient's life is at stake. Recovery depends upon prompt and proper treatment.

For these reasons this subject is always worthy of attention from medical men. It is true, no doubt, that the condition is primarily a surgical complication. Nevertheless the general practitioner or the internist is often the one who controls the destiny of the patient. Very often it is he who sees bowel obstruction in its early stages

when it is most amenable to treatment. The diagnosis is not always easy. The condition is not an everyday occurrence in the practice of the average physician. In fact, it is just sufficiently rare that he hesitates often to believe his own fears about the case, and often permits himself to proceed with a regime of watchful waiting, a plan which we must admit is often necessary in affairs medical.

When, however, the physician understands the management of a patient who is developing a bowel obstruction, he assumes a very grave responsibility and he finds himself faced with many difficulties. The onset of bowel obstruction is not always dramatic; it is often insidious so that a serious condition exists before the true state of affairs is recognized.

Then suddenly it occurs to all concerned that something must be done at once, and the unfortunate patient is rushed into the

\*Read before Section General Medicine, Annual Meeting, O. S. M. A., Tulsa, May, 1934.

surgery for an emergency operation. This is wrong.

Though there is yet much to be learned about the subject of bowel obstruction, and although much of the vast experimental work has seemed to be of little fundamental importance, nevertheless our practical knowledge of the subject has been vastly increased in the past few years. It is the purpose of this paper to emphasize chiefly these more or less recent additions to our knowledge.

#### PATHOLOGY OF BOWEL OBSTRUCTION

A complete discussion of the pathological changes which may be associated with bowel obstruction would be didactic, laborious and beside the point. For years, both clinical and experimental observers have pondered the cause of death, assuming it to be a specific toxemia. At the present time it seems quite apparent that there is no one single cause of death in acute intestinal obstruction. From this point of view, regardless of etiology, we must consider two types of bowel obstruction: (1) Simple obstruction; (2) Strangulation of the bowel.

In simple obstruction there is merely a failure of the intestinal current to pass on. The intestinal wall is undamaged and its circulation is intact. Under these conditions all observers agree that there is no absorption of toxins sufficient to cause death. There is, however, a definite metabolic disturbance, characterized by dehydration and a loss of chlorides from the blood in addition to other blood chemical changes. These changes are due solely to the fact that the gastric and upper intestinal secretions are prevented from reaching the colon where water and inorganic salts normally are reabsorbed. These changes alone may be fatal. However, they can be combated quite successfully by purely medical means, namely, the intravenous administration of normal salt solution in large quantities. To this may well be added glucose and Hartman's solution which supplies other electrolytes and buffer substances in addition to the chlorides.

In other words, though a simple obstruction of the bowel may require surgical intervention for its permanent cure, it is not a surgical emergency and is far better managed by a conservative plan of treatment to be outlined later.

Strangulation of the bowel is a condition in which the obstruction is complicated by impairment to the circulation of the

intestine. The involvement may be partial or complete, sudden or insidious. In view of the fact that gaseous distention alone is capable of producing a condition of strangulation, it is apparent that practically any obstruction occurring below the duodenum sooner or later becomes complicated by this over-distention unless the pressure is in some way relieved. In this condition of obstruction plus over-distention or strangulation the patient not only suffers the metabolic disturbances already described but in addition must combat far more serious pathological changes. Frankly, these are not entirely understood. It is assumed that under conditions of strangulation and over-distention of the bowel, toxins are absorbed into the blood stream. Concerning this point, however, there is much interesting controversy. It is generally assumed that the normal content of the intestine is relatively non-toxic and becomes toxic only after and as the result of an obstruction. This is a fallacy. Recently we have shown that the normal content of the intestine is usually more toxic than the material removed from an obstructed bowel. This toxic property of normal intestinal content is due chiefly to the combined secretions of the pancreas and duodenum. When compared to this material, the contents of an obstructed loop of bowel are relatively innocuous unless the loop actually receives and retains this toxic pancreatico duodenal secretion. It is difficult to believe that the stagnant, foul-smelling content of the obstructed bowel should be actually less toxic than normal intestinal content. This is nevertheless true. The question arises how to explain this lessened toxicity! It is possible to assume that this observation lends weight to the view that toxic substances are present normally in the intestine and are absorbed under conditions of obstruction. Of this we have no proof.

In our studies we have been unable to demonstrate in any fashion the actual absorption of toxins from an obstructed bowel until necrosis or gangrene occurs. In such a situation the absorption obviously must be transperitoneal for the most part. Blood and lymphatic drainage has been cut off by the strangulation. Under these conditions the toxins absorbed are far less important than the hazard of generalized peritonitis from a gangrenous or perforated intestine.

It is true that patients and also experimental animals will die of obstruction in the absence of peritonitis or the other ap-



parent factors I have mentioned. Therefore it is no doubt true that the last word has not yet been written concerning the toxemia of bowel obstruction. We find, however, that none of these obscure factors in the causation of death are encountered so long as over-distention of the bowel is prevented. In other words, it seems that the greatest single menace encountered in a case of acute intestinal obstruction is the damage resulting from over-distention of the intestine.

#### MANAGEMENT OF THE PATIENT

The question naturally arises—how does the foregoing discussion benefit the patient in any practical manner? Though a complete answer cannot be given in a few words, it is nevertheless true that the hazard of bowel obstruction is reduced to a minimum by a plan of treatment based upon the principles outlined above. Before entering upon this discussion, however, we should consider briefly a few salient points concerning etiology, symptomatology and diagnosis.

*Etiology:* The factors which enter into causation of bowel obstruction are in general too well known to warrant detailed discussion here. In a patient whose abdomen shows the scar of a previous operation the most likely cause of an obstruction is adhesive bands which either constrict or kink the gut. In a patient past middle age with no other apparent cause for obstruction, malignancy of the colon should be the first thought. Other purely mechanical causes are herniation, either external or internal, volvulus, cicatrix from ulceration, intussusception which most commonly occurs in children, and foreign bodies such as gall stones, enteroliths and swallowed articles. I wish especially to emphasize the fact that acute inflammation such as localized peritonitis or abscess may often cause bowel obstruction which is essentially mechanical in type. Of this more will be said later.

Paralytic or adynamic ileus may be either neurogenic, toxic, infectious, or circulatory in origin and may be due to spinal cord lesions, abdominal trauma, renal colic, pneumonia, generalized peritonitis or mesenteric thrombosis. Obviously this type of ileus may be of minor consequence or of fatal significance depending upon the gravity of the underlying pathology.

Ileus of dynamic or spastic type should be mentioned. Lead poisoning appears to be the chief cause.

*Symptomatology:* The symptoms of bowel obstruction are somewhat variable depending upon the etiology, the suddenness of the obstruction, the portion of the intestine involved, the extent to which blood supply is strangulated and the degree of parietal peritoneal irritation. Admitting these variables, there are four cardinal symptoms which are definite and significant. These are abdominal pain, vomiting, abdominal distention and obstipation. It is obvious, however, that the symptoms will vary in intensity and no one of them of itself is diagnostic.

The pain is extremely variable and at the outset varies in degree from mild to most excruciating, depending chiefly upon the suddenness of onset. It is apt to be paroxysmal due to hyper-peristalsis. If there is strangulation or marked peritoneal irritation, there is extreme abdominal tenderness but this likewise is variable.

Nausea and vomiting is a symptom so frequently observed in disease as to occasion little concern in most instances. When, however, it is associated with abdominal pain as discussed above, it cannot be disregarded; and certainly no one will deny that incessant vomiting, finally becoming fecal, is of itself pathognomonic of obstruction. I hasten to add, however, that fecal vomiting should be considered a late sign and a testimonial to the fact that diagnosis and treatment have been postponed too long.

The third cardinal sign, abdominal distention, is also one which cannot be ignored. In typical cases the distention grows progressively more pronounced, and ladder patterns of the distended bowel loops may be seen, but this picture most certainly is subject to marked variations, and difficulties of interpretation depending upon the abdominal muscle power, degree of obesity, the management the case is receiving, and other factors. In cases of high obstruction the abdomen may be tense but never greatly distended. In the low obstructions, distention usually becomes very great, especially when intake of fluids and food or medication is continued by mouth.

The obstipation of complete acute intestinal obstruction occurs obviously because the intestinal content cannot pass the point of obstruction. This, however, does not necessarily prevent one or more stools coming from below the obstruction. Furthermore, obstipation occurs in many abdominal conditions other than obstruction.

Finally, though all of these cardinal symptoms are variable, and though no one of the four can be taken as diagnostic without considerable qualification, it is nevertheless true that each is an important part of a composite picture, the significance of which should be comprehended without delay.

*Diagnosis:* The diagnosis of bowel obstruction begins primarily with the syndrome just described.

In the physical examination of such a patient much valuable information is gained by auscultation of the abdomen. In mechanical obstruction, violent borborygmi will be heard. In a patient with a distended abdomen and the other symptoms of ileus, these peristaltic sounds give a distinct note of encouragement. The distended silent abdomen of generalized peritonitis is a forecast of doom. The same picture will often be encountered in the moribund stages of any bowel obstruction.

A valuable aid in the early diagnosis of an obstruction is to be found in the intelligent use of the x-ray. The barium meal obviously is contraindicated. It is distinctly dangerous to the patient and gives only misleading information. The barium enema, however, is of great value and is quite successfully diagnostic for obstruction below the caecum.

A flat x-ray plate of the abdomen gives far more information concerning obstruction than is generally recognized. Distended loops of bowel with fluid levels give evidence of ileus, and the distribution of gas is also significant. If, for instance, no gas is seen in the colon and over-distended loops of small intestine are observed, the picture may be taken as indicative of ileus.

In view of the well recognized difficulties of positive diagnosis, it is only logical that any patient with symptoms causing reasonable suspicion of ileus should receive treatment accordingly.

*Treatment:* While it is true that radical surgical intervention may be the best treatment in many cases of bowel obstruction, it is by no means true in all cases. In any event the mere statement that acute intestinal obstruction is a surgical emergency is of little practical value. Many times a direct surgical attack upon the actual cause of the obstruction is the worst form of treatment. Certainly this is true in cases of obstruction occurring as a post-operative complication.

Here the obstruction is either inflammatory or adhesive in origin. Here especially we are correct in stating that the real menace to the patient is the over-distention of the bowel. If this be prevented or relieved, the obstruction can and should for a time be ignored. It is necessary only to supply the metabolic needs of the patient by intravenous fluid therapy. In many instances when the bowel is decompressed, the inflammatory or adhesive types of obstruction are relieved spontaneously in a few days' time.

This indirect decompression of the distended bowel may be accomplished by means of an enterostomy under local anesthesia, the enterostomy tube or catheter anchored in bowel above the obstruction after the method of Witzel. The enterostomy heals spontaneously after the tube has been removed following the relief of the obstruction.

Recently an even more simple method of upper intestinal decompression has come into favor. I refer to suction-siphon drainage by means of a duodenal tube installed through the nose. Wangenstein<sup>1</sup> has given a complete discussion of this method. Details of its application are discussed with the accompanying diagram.

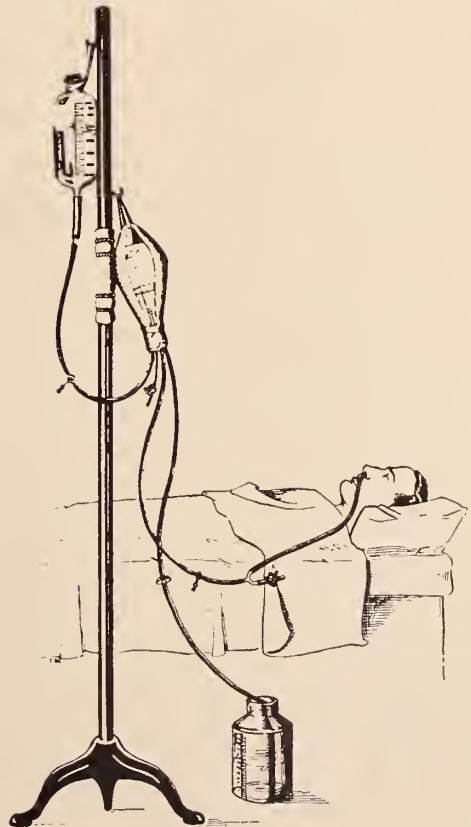


FIGURE 1



Figure 1 shows the apparatus as described by Wangenstein and Paine.<sup>4</sup> The suction siphon action will continue indefinitely as long as a fluid level is maintained in the upper bottle. When this fluid is entirely replaced by gas from the bowel the siphonage will cease until the bottle is refilled.

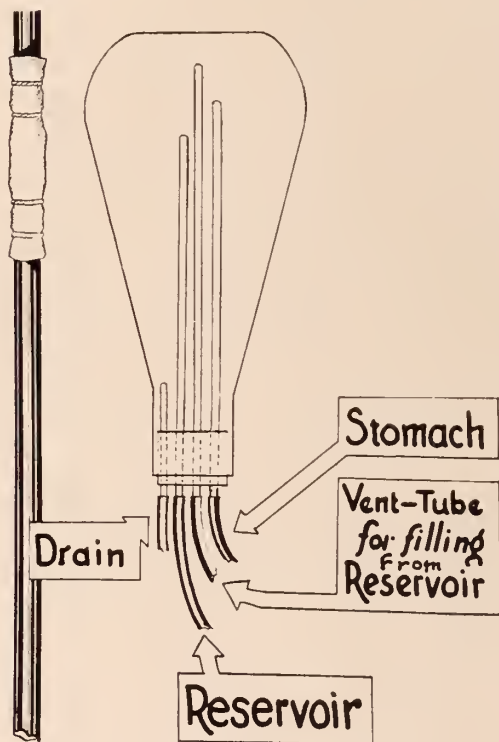


FIGURE 2

Figure 2 shows a modification of the apparatus as devised by Dr. Horace Banks of Indianapolis and recently discussed by Dr. Murray Hadley in a report which is as yet unpublished. In this, the stopper of the upper bottle is fitted with two additional tubes. One of these leads to a reservoir which permits filling of the upper bottle without removing the stopper. The other additional tube is necessary to provide a vent through which the air in the bottle escapes as the fluid is added from the upper reservoir. These two additional tubes are clamped shut while the siphon is in operation.

Figure 3 shows details of the upper bottle. The duodenal tube requires occasional washing with a syringe in order to remove mucous from the openings at the tip. The Levin tube is recommended. It has a catheter tip with several perforations.

Minor technical difficulties in the working of the apparatus will easily be overcome by experience.

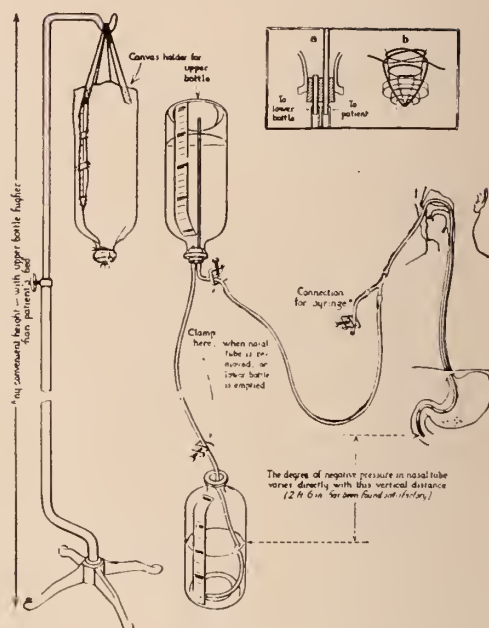


FIGURE 3

I wish to recommend this duodenal drainage as a valuable and life-saving procedure. The idea is not new but the recent improvements in its application have greatly increased its effectiveness. The simple apparatus with the continuous gentle suction-siphon action greatly facilitates the removal of both fluid and gas first from the stomach and upper intestine, finally in most instances effecting a satisfactory decompression of the entire obstructed bowel. When this is accomplished the obstruction is in many cases converted into the simple type. The danger to the patient's life is reduced to a minimum and the surgical emergency of bowel obstruction with its well known hazard no longer exists.

It is true that in some instances a local area of the bowel may be undergoing gangrene from complete strangulation which cannot be relieved by the decompression. These obviously require direct surgical attack.

Admitting that the procedure and management of any given case is an individual matter, it is nevertheless true that the conservative plan of treatment will many times save a life which would be lost by major surgery.

As previously indicated, this decompression treatment is especially indicated in the post-operative obstruction as encountered typically in peritonitis from ruptured appendix. It is equally effective in most adhesive types of obstruction. Though

it is incorrect to consider duodenal tube as equal to enterostomy in all cases, there are many enthusiastic reports of its value. Finally it offers a splendid method of protecting the patient in whom ileus is suspected but not acutely certain.

If, after a reasonable trial, it becomes apparent that distention is not being relieved by the duodenal tube, an enterostomy should be performed, or if the patient's condition will permit, an exploratory operation.

#### GENERAL SUMMARY

In the light of our present knowledge it becomes apparent that intestinal obstruction is not a surgical emergency except in cases known to be complicated by strangulation. In most instances the prognosis is much improved by preliminary decompression of the obstructive bowel and a period of conservative treatment as out-

lined above. In many instances the immediate danger of bowel obstruction is removed when over-distention of the intestine is prevented or relieved. In all cases, however, the problem is a serious one requiring skilful management in order to avoid a fatal termination.

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## THE PHYSIOLOGY OF THE ENDOCRINE GLANDS\*

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The development of the subject of endocrinology has at last put this enigmatical branch of medicine upon a scientific basis. No other field of medicine has made greater progress during the past twenty-five years. Problems in diagnosis have been extremely difficult to solve, the literature has been flooded with a tremendous volume of conflicting work, the market has been deluged with glandular products of every description, exploiting this new branch of medicine. The scepticism of careful, cautious physicians has been fully justified because endocrine therapy has, in the past, been tried and found wanting. The medical profession continues to be exploited by some pharmaceutical houses which market a great many useless, inert, irrational polyglandular concoctions which are commonly prescribed, even by physicians who in other subjects practice the best of scientific medicine. Until endocrine diagnosis by the medical profession as a whole becomes more ex-

act and on a more rational, scientific footing and less subject to impressionistic speculation results will necessarily be poor. In no other phase of practice is physiology so important as in the practice of endocrinology.

It is my purpose to review briefly the physiology of the endocrine glands, for upon a full understanding of the glandular function will clinical endocrinology be successful. An attempt will be made to present in concise form the more important known facts from the maze of current literature in the hope that it will stimulate the practitioner to study the all-powerful, all-important endocrine glands upon whose function our entire mental and physical development depends.

Progress in the study of glands of internal secretion has been due chiefly to American scientists. Comparatively few important developments have been made by European workers. Such investigators as Evans, Cushing, Smith, Collip, Banting, Best, Frank, Corner, Crile, Allen, Bailey, Dandy, Reichert, Davidoff, Swingle, En-

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gle, Kendall, Fluhmann, Rogoff, Stewart, Allen, Doisy, Kamm, Hartmann and a host of others have labored tirelessly and the fruits of their efforts are known to all. The tremendous importance of the hormones on somatic growth and development, the immunity mechanism, sexual development, reproduction and psychic phenomena are forcing us to change radically our fundamental concepts of disease and its processes.

#### THYROID

The function of the thyroid is the least understood of all the endocrine glands. Kendall published his first paper dealing with the isolation of an active thyroid hormone in 1915. A few years later he identified this substance chemically and gave it the name thyroxin. While other hormones of the thyroid have been suggested, from our present knowledge thyroxin is the only known endocrine principle. Many experiments leading to its discovery cannot be mentioned for lack of space. As early as 1895, Kocher suggested the presence of iodine in the gland, this being subsequently verified by Baumann and others. This active principle is elaborated by the acinar cells and stored in colloid form. One milligram given intravenously in animal or human increases the metabolic rate about 2.8 per cent. The action of this hormone is that of a catalyst in that it has been shown to activate the entire animal organism directly or indirectly. An excess of the hormone produces a clinical picture of thyrotoxicosis, while a deficiency produces the syndromes of myxedema and cretinism. Without its presence, mental, somatic and sexual development are retarded. The skin becomes thick, the nails brittle, the hair is coarse and falls out. The clinical findings of cretinism and myxedema, with general depression of all bodily activities, are well known. Thyroidal obesity is characterized by a gradual increase in weight with myxomatous infiltration of the subcutaneous tissue, accompanied by some or all of the symptoms of hypothyroidism and myxedema. The fat is distributed rather evenly over the entire body in contrast to the Frohlich type which is essentially a pelvic and pectoral girdle adiposity. Associated symptoms may be fatigue, slight deafness, somnolence, lack of energy, constipation, digestive disturbances, mental sluggishness, depressed sexual functions and albuminuria. The basal metabolism may be normal, but is usually definitely decreased.

The majority of mild hypothyroidisms are not accompanied by obesity; in fact, these patients are often decidedly underweight. Associated disorders of the sexual and gestational cycles may be directly related to an inadequate supply of thyroid secretion. There is a definite lowering of resistance to infection, the mechanism of which is probably a reduction in complement. Long-standing thyroid deficiency inevitably results in hypo-functions of other glands as well as depression of all somatic functions. Experimental hypo and hyper-thyroidism are readily produced by thyroidectomy and thyroid substitution therapy, respectively. Recently Anderson and Marine have produced the first experimental exophthalmos by injection of the so-called thyrotropic hormone from the anterior lobe of the hypophysis.

#### HYPOPHYSIS

Ablation of the hypophysis invariably leads to an abnormal development. Although complete hypophysectomy is compatible with life, hypophysectomized animals develop a severe cachexia and die long before the normal span of life has passed. In adult animals early genital regression is followed by a state of debility designated as cachexia hypophysiopriva which in adults has its counterpart as Simons' disease, or pituitary cachexia. In young animals the earliest and most striking changes are the cessation of growth and development. Ablation of the anterior lobe, when complete, results in immediate cessation of growth. Infantile characteristics persist and in the human we have the Lorrain-Levi dwarf, characterized physically by retention of the milk dentition, the fine lanugo hair growth and open epiphyseal cartilages. Physical growth and development stop, the epiphyseal cartilages shrink, and blood calcium levels become lower, probably as a result of parathyroid insufficiency. Replacement of the growth hormone is followed by growth and development to normal or even a stature in excess of normal. In experimental animals gigantism has been produced by Evans and his co-workers, and by Putnam, Benedict and Teel in Cushing's Laboratory. Potent extracts of the growth hormone were first produced by Evans and Long and are now prepared in relatively pure form. Replacement therapy in the human has been reported by Engelbach and others with satisfactory resumption of growth and development. While as yet

in the experimental stage, successful growth increment may be anticipated.

The pituitary sex hormone or hormones elaborated by the basophilic cells of the anterior pituitary are essential to growth and development of the genital system. Its absence results in testicular or ovarian under-development while ablation is followed by regression in size of the gonads, atrophy of the tubules, and accessory organs (Cowper's glands, uterus, tubes, prostate, seminal vesicles) with lack of germ cell production. Secondary sex characteristics fail to develop (axillary and pubic hair, breast and bust development in the female) without the presence of the female sex hormones, and sex interest and desire are not manifested. Substitution of the pituitary sex hormone or hypophyseal tissue after hypophyseal ablation results in stimulation of the sex organs with development of all sex characteristics. Ascheim and Zondek in Germany and Smith in America, working independently, discovered the gonad stimulating properties of anterior pituitary transplants. In 1927 Ascheim and Zondek discovered large amounts of the gonad stimulating hormone in the urine of pregnant women which they termed prolant. Since this time, it has been encountered in large amounts in the blood and urine of pregnancy and in the placenta, which discovery has enabled us to make an early diagnosis of pregnancy, heretofore impossible. The ovarian and female sex hormones in the urine of pregnancy may readily be separated and supplies from this source furnish the commercial products. This pituitary sex hormone from urine, prolant, is not the sex hormone of the anterior hypophysis. Collip and Phillip believe that it is elaborated by the placenta and chorionic villi, others that these tissues store the hormone which the enlarged and stimulated hypophysis produces. Evans and his co-workers are convinced of the hypophyseal origin of prolant. They have shown that prolant, while gonadotropic, differs from the true gonadotropic substance found in the hypophysis itself. During pregnancy great amounts of estrin and prolant are elaborated in the blood and urine, the latter serving as a commercial source of supply. Prolant has been produced in a pure crystalline form and recently has been crystallized. Phillip in Europe and Collip in America believe prolant is elaborated by the placenta and in support of this belief they call attention to: (1) a case of live ovarian pregnancy surrounded by a massive fibrin

layer, with no prolant in the urine; (2) its absence in some cases of hydatiform moles and chorioepitheliomata; (3) the fact that prolant appears immediately after pregnancy, while the pregnancy cells are not found until two months after pregnancy take place; (4) absence of the hormone in the human hypophysis during pregnancy.

In refutation of this and supporting the hypophyseal origin is the prompt appearance of prolant after surgical ablation of the gonads. Prolant, which appears in the urine of pregnant women, is gonadotropic but less effective than the true gonadotropic hormone found in the hypophyseal itself. (1) Prolant has sharply limited effects while the true hypophyseal substance gave increasing effects on genital growth. (2) Prolant will not increase the size of the testes in birds. (3) Prolant will not cause red dening of the sexual skin in macacus monkeys while hypophyseal hormone does this readily. (4) Prolant is not effective in hypophysectomized animals in many cases even when massive doses are used. Evans and his co-workers have found a new hypophyseal substance which when added to prolant increases its potency tremendously. It is present in alkaline growth hormone extracts, but may be separated from both the growth and sex hormones. This substance which Evans terms the activator of prolant gives to the latter a potency greatly exceeding anything previously found and probably will be of great therapeutic importance.

Corner in 1930 published studies which give evidence of a hypophyseal hormone which controls lactation. Recent work by Riddle and his associates has greatly strengthened this view, but as yet this substance has not been isolated from other hormones. Some evidence exists that the corpus luteum may exert an influence upon development of the mammary tree, which development must occur before the lactogenic hormone provokes a true milk secretion.

Clinical studies have shown very low basal metabolic rates in proven cases of pituitary cachexia. A marked lowering of the specific dynamic action of food is a constant finding in Frohlich's adiposity. Carefully controlled experimental work by Foster and Smith confirms these findings. They also verified the observation of Baumann and Hunt that thyroidectomy obliterates specific dynamic action as did hypophysectomy. Substitution of the whole



pituitary gland brought conditions back to normal. Subnormal thyroid function always follows hypophysectomy, causing a lower basal metabolic rate than complete thyroidectomy. Anterior lobe extracts quickly restore the thyroid after hypophysectomy and cause a rapid rise in the basal metabolic rate. The thyreotropic hormone has been separated from the growth hormone and by its use experimental exophthalmos has recently been produced for the first time.

Cushing, in his earlier ablations of the hypophysis, noted an increased tolerance to carbohydrates which contrasts to the decreased sugar tolerance and diabetes often found in acromegaly. That a pancreatic-hypophyseal relationship exists has been shown by Houssay and Magenta of Buenos Aires who first demonstrated the increased sensitivity of insulin shown by hypophysectomized dogs and pointed out that diabetes produced by ablation of the pancreas was relieved by hypophysectomy. Evans, Meyer, Simpson and Reichert have produced true diabetes in normal dogs by alkaline extracts of the hypophysis, which finding is strong evidence in suggesting a pituitary causation of diabetes mellitus presumably by over-production of a pituitary hormone, diabetogenic in effect, which possibly acts by depression of the Langerhans tissue. While the diabetogenic factor is unknown, strong evidence of its presence is presented.

Camus and Roussy in 1921 showed that the adiposities which so often accompanied hypophyseal ablation could be produced by injury to the tuber cinereum when the gland itself was uninjured. This has subsequently been confirmed, and experimentally perfect dwarfism may be produced by hypophysectomy without traces of adiposity. It has been shown by Raab that the fat regulating center is located within the hypothalamus and is dependent upon a normal supply of pituitrin. He found that subcutaneous injection of several cubic centimeters of pituitrin in dogs caused rapid absorption and destruction of the circulating neutral fat by the liver, thus preventing its deposit in the tissue. If the tuber cinereum is destroyed or the nerve pathways cut between it and the liver the effect of pituitrin is lost. These observations explain in part the so-called pituitary obesity. Camus and Bailey also maintain that the tuber cinereum in the hypothalamus is the center of fat metabolism. These findings make a direct relationship be-

tween the so-called pituitary adiposity and pituitary hypofunction probable. Evans states emphatically that the gonadotropic hormone is not involved in pituitary obesity.

Anselmino and Hoffman in 1931 demonstrated a substance from the pituitary similar in properties to prolactin which they believe to be a hormone regulator of fat metabolism. By injecting this substance into rats and humans an acetonemia is produced. The increase of betaoxybutyric acid is relatively greater than the increase of acetone and acetoacetic acid. A direct relationship of the acetone bodies to fat metabolism is self-evident since these acids are decomposition products created during the combustion of fat. This substance or hormone is thrown into the blood only when fat is burned, namely, after a fat meal and in starvation. Anselmino and Hoffman consider this to be a true fat metabolism hormone. While importance of the neuro-pituitary mechanism to carbohydrate metabolism is as yet unsettled, a close relationship is indicated by Evan's work in which diabetes was produced by injection of the diabetogenic hypophyseal hormone.

The posterior lobe or neurohypophysis is composed of neuroglia tissue and is separated from the adenohypophysis or anterior lobe by a layer of epithelial cells, the so-called pars intermedia. According to Geiling the posterior lobe secretion is elaborated by the pars intermedia, the posterior lobe acting as a reservoir for the hormone. According to Cushing and Goetsch the hormone is discharged into the third ventricle and thence into the blood stream. It is probable, however, that the secretion passes both into the ventricle and into the blood vessels. Pituitrin, the second internal secretion to be identified, was produced in 1895 by Oliver and Schaffer who first demonstrated its prompt stimulating action upon the uterus; however, Blair Bell had previously introduced it into obstetrical practice several years before.

The influence of pituitrin on carbohydrate metabolism has been a much discussed subject. Frohlich's disease is associated with a decided increase in carbohydrate tolerance. In contrast hyperpituitarism (acromegaly) is frequently associated with glycosuria, hyperglycemia and lowered galactose tolerance. Injections of pituitrin cause hyperglycemia and glycosuria. Raab has demonstrated that injection of pituitrin into dogs is followed by the

absorption and destruction of the circulating neutral fat by the liver, thus preventing its deposition into the tissues. He has also shown that this effect disappears after destruction of the tuber cinereum. Raab's work gives some scientific basis for the obesity often accompanying pituitary insufficiency.

The success of posterior pituitary extracts in relief of diabetes insipidus indicates an antidiuretic effect. Diabetes insipidus is often associated with lesions about the hypophysis and floor of the third ventricle. According to Lewis in seven per cent of interpeduncular tumors associated with Frohlich's disease diabetes insipidus is present at some time.

In 1929 Kamm and his co-workers reported the separation of pituitrin into two independent fractions, alpha-hypophamine which they termed pitocin and beta-hypophamine, termed pitressin. Alpha-hypophamine or pitocin is oxytocic, causing contraction of uterine muscle when injected into a normal animal and contracting isolated uterine muscle when applied by contact. It is practically free from action on other forms of smooth muscle. Beta-hypophamine or pitressin has no effect upon uterine muscle but stimulates other smooth muscle to contraction. It raises blood pressure, stimulates peristalsis of the gastro-intestinal tract and has both a diuretic and anti-diuretic effect. Kamm and his co-workers have apparently succeeded in isolating a pressor-free, diuretic-free melanophore fraction from pitressin which has a regulating effect upon pigmentation.

#### OVARY

Two active hormones have been isolated from the ovary and have found extensive clinical use in treatment of disorders of the climacteric and reproductive cycle. The first, oestrin, the female sex hormone, was prepared in potent form by Iscovesco in 1912 and has recently been obtained in a crystalline form having a high degree of potency and purity by Doisy, Veler, and Thayer. An idea of its potency is given by the fact that one gram of the crystalline product is equal to two million rat units. Physiologically it is derived from the theca interna and stratum granulosum of the ovarian follicle. The second, progesterin, is the active hormone of the corpus luteum. It has been shown conclusively that the combined and balanced action of the two ovarian hormones is essential to the normal sexual cycle.

Oestrin produces specific alterations in the tubes, uterus and vulva of castrated or immature animals. By its administration the uterus becomes greatly enlarged and vascular, and the menstrual cycle can be reproduced by adequate dosage of oestrin and the luteal hormone, progesterin, the latter being essential to the premenstrual phase. It has been shown experimentally by Allen that large doses of oestrin produce an inhibitory effect on the ovaries. Changes described by various investigators are ovarian atrophy, a decrease in primordial and medium sized follicles, and with incomplete growth and development of the ovary of immature animals. Dahlberg was able to inhibit the gonad stimulating hormone effect of the ovary by simultaneous injections of follicular fluid, concluding that oestrin counteracted the effect of the pituitary sex hormone by prevention of ovulation and luteinization. Experimentally in the rodent an excess of oestrin inhibits conception and interrupts pregnancy. Oestrin also produces hyperplasia of the mammary tree and restores the lowered basal metabolism in castrates to normal. In 1923 Allen and Doisy standardized a biological assay of the hormone by the vaginal smear method. By injection of follicular fluid into castrated or immature rodents the vaginal reaction is that of full oestrus in seventy-two to ninety-six hours, which is characterized by cornification of the vaginal walls as determined by vaginal smears. Zondek discovered huge quantities of the hormone in the urine of pregnant women which now serves as the most abundant source of the hormone for commercial use. Large amounts are also found in placenta, follicle-fluid, and amniotic fluid. The crystalline female sex hormone prepared by Doisy, Veler, and Thayer has been named theelin.

Recently Thayer, Levin and Doisy have isolated an oestrus-producing substance called theelol, similar in physical properties to theelin, but unlike the latter in that it is effective by mouth. It is the belief of these investigators that it represents a transformation of theelin by the process of extraction and purification. Its influence, like that of oestrin, is confined entirely to the tubular tract. This hormone also promotes the development of secondary sex characteristics and allays hyperexcitability incident to the menopause.

Progesterin, the second ovarian hormone, is obtained by extraction from the corpus luteum. Frankel (1903-1910), in a large



series of experiments, showed that removal of the ovaries or destruction of the corpus luteum in rabbits during the first six days after mating invariably resulted in abortion. Corner and Corner and Allen in 1929 confirmed this work and prevented abortion in ovariectomized rabbits by injection of luteal extracts. Progesterin has an inhibitory action upon estrus. It also has for its function the progestational proliferation of the endometrium following the hormonal action of theelin and sensitization of the endometrium for implantation of the fertilized ovum, growth of the decidua, maintenance of pregnancy and inhibition of ovulation. In the human female active corpora lutea form spontaneously with the menstrual cycle, as indicated by the cyclical formation of the premenstrual endometrium, persisting throughout gestation if pregnancy occurs, and becoming atrophic if it is missed. Morrell has demonstrated the ability of the hormone to nullify the effect of pituitaria on the guinea-pig uterus, and the inhibitory effect of the lutein hormone on the uterine contractions has been demonstrated by Hisaw. Experimental evidence points to progesterin as inhibiting the production of the follicle hormone and promoting its excretion. Since progesterin inhibits ovulation and also inhibits the action of pituitary transplants it apparently depresses the anterior pituitary. Although the hormone has not been obtained in pure form its physical and chemical properties have been described. Preparations have been standardized by Corner and Allen.

#### TESTIS

In the new-born the interstitial cells of the testis are few and diminish in number until puberty when they again increase with the onset of spermatogenesis. They remain approximately constant during sexual life and diminish in later life. These cells, histologically, are epithelial in appearance and are usually arranged about the blood vessels. If the testes are removed early in the human, the reproductive apparatus does not develop. The seminal vessels and prostate remain small and atrophic and secondary sex characteristics do not appear. There is no growth of hair on the face or body, the pubic hair is of the female type, the growth of the larynx is arrested, the mentality is peculiar and there is a tendency to gigantism due to late epiphyseal union. Abnormal accumulations of fat are found on the buttox, hips, pubes and breasts.

Many workers, including Steinach of Vienna, believe that the testicular secretion is elaborated by the interstitial cells. Upon this assumption Steinach claims that ligation of the vas, which brings about degeneration and atrophy of the tubular spermatogenic tissue, leads to hypertrophy and hyperplasia of the interstitial cells which results in restoration of waning sexual function and causes a rejuvenation of bodily and mental vigor. Voronoff and his followers in France claim the same results by transplantation of normal testicular tissue of another human being or of anthropoid apes. The supposed action in the Voronoff procedure is the same as that of Steinach. Transplantation leads to degeneration and disappearance of the tubular germinal cells and supposedly of the interstitial cells. Recent investigations by Kraus of Prague lead to the conclusion that ligation of the vas does not lead to any actual increase of interstitial cells in young or old animals. He found that the interstitial cells themselves disappeared if the tubular epithelium was completely destroyed. Kraus believes the specific hormone of the testis is elaborated by the specific germinal cells and that the function of the interstitial cells is a trophic one, furnishing nourishment for the germinal epithelium. Moore at the University of Chicago has called attention to the fact that the general laws of species specificity make it highly improbable that tissue from another than the host will prove susceptible for incorporation. Transplants of testes tend to become non-viable. Proofs of functional persistence are singularly lacking and unconvincing so far as the human tests show. Moore has shown that autolysis of non-viable testicular grafts does not liberate the secretion in amounts that can be detected by means at present known. Further, the male hormone is not stored in the body but is excreted by the kidneys. A continuous supply is necessary to maintain the secondary sex characteristics in a normal condition. In face of these facts little or no reliance may be placed upon the work of Steinach and Voronoff.

The occurrences of the male hormone in the urine of young men has been demonstrated by Funk, Harrow and Lejwa.

The male sex hormone has not, as yet, been positively identified but has been produced in potent form by McFee, Domm, Juhn and Moore, McGee, Gallagher and Koch. By injection into capons definite

increased growth of comb and wattles was produced while in castrated mice and rats enlargement of the seminal vesicles was noted. As yet the use of testicular substance is in the experimental stage but it is hoped that in cases in which the testes have been damaged, removed or are primarily deficient the hormone will prove of benefit.

#### THE PINEAL BODY

To date, little evidence has been produced which throws any light upon the function of the pineal gland. Experimentally Horrax hastened development of the reproductive organs in the guinea-pig by extirpation of the adrenal body. Dandy (1915) found that extirpation of the pineal resulted in no change in growth or genital development.

Pineal tumors, usually destructive teratomas, have been described as producing precocious puberty by removal of the inhibitory influence of the glands upon the gonads. According to Mazer and Goldstein, the pineal body must exert any sex inhibiting influence by action on the anterior pituitary, as this gland is the chief controlling factor in function of the ovary and testes.

#### THYMUS GLAND

The thymus gland, since its discovery by Galen, has been the subject of a tremendous amount of conflicting and fruitless experimentation. Ablation and replacements have produced no constant results and there are few known facts concerning its function. The literature affords no reliable evidence that the thymus has any true internal secretion. It is undoubtedly of importance because of its lymphoid character, and may possibly be concerned with the defensive mechanism against infections. No attempt will be made here to review the great mass of controversial material. The thymus clinically is of interest because of such conditions as status lymphaticus, thymic enlargement, and thymic neoplasms.

#### PARATHYROID GLAND

The parathyroid glands were discovered by Sandstrom in 1880. Eleven years later Gley called attention to the physiologic significance of the glands to tetany, but his observations were overlooked until recent years. With increased investigation of the thyroid gland and the chemistry of foods, calcium metabolism and the parathyroid glands have assumed a prominent role in the field of metabolism and nutrition.

Erdheim in 1911 concluded that tetany followed parathyroidectomy, and that changes in the teeth and bones occurred following removal of the glands. In 1916 Noel Paton and his co-workers advanced the theory that tetany was due to methyl guanidine and that the function of the glands was to remove guanidine as a preventative measure of tetany. McCallum and Voegtlin in 1909 propounded the theory that tetany was due to a deficiency of body calcium. The next great advance was made by Collip who in 1925 reported preparation of a potent hormone which relieved experimental tetany in dogs. By use of this extract it has been possible to investigate fully the functions and chemistry of the parathyroid glands. Sabbatini in 1901 first drew attention to the sedative actions of calcium upon nerve tissue and Parhon and Urech in 1907 demonstrated in experimental animals that calcium chloride injections would completely control the convulsions following parathyroidectomy. Dragstedt (1922, 1923, 1924) and his associates in experiments upon animals were able to prevent death in parathyroidectomized animals by avoiding intestinal intoxication by use of a carbohydrate diet and were able to precipitate attacks of tetany in the same animals by feeding meat and other protein foods.

Dragstedt concluded that the toxic agents following parathyroidectomy arise through the activity of the proteolytic group of intestinal bacteria and consist chiefly of protein-split products of the nature of the amines, guanidine, methylguanidine, histamine, choline and trimethylamine. He also concluded that the function of the parathyroids is to prevent intoxication by these poisons. Soon afterwards Luckhardt and Goldberg found that parathyroidectomized dogs could be kept alive indefinitely on a diet rich in meats by the oral administration of calcium lactate.

Collip's parathormone, when injected, causes a mobilization of the calcium in the blood with a definite increase in the diffusible fraction. This diffusible fraction is decreased following parathyroidectomy. Blood calcium levels give no absolute idea as to the ratio of the diffusible and non-diffusible fraction but correspond in a general way to these levels. Bergeim and Irving have shown that increased acidity favors the absorption of calcium. With increase of serum calcium and the ionized fraction phosphorus levels drop; converse-



ly with a decrease of calcium levels, serum phosphorus rises. It is of interest to note that with starvation there is an irreducible minimum of excreted calcium which varies from 400 to 600 milligrams daily. A definite but as yet only partially explained relationship exists between the parathyroid glands and vitamin D. Paradoxically, both tetany and hyperparathyroidism, clinical conditions representing deficiency and hyperactivity of the parathyroids, are relieved by administration of irradiated ergosterol or cod liver oil. Quick and Hunsberger suggest an antagonism between the parathyroids and vitamin D as well as a synergism in so far as vitamin D seems to aid absorption of calcium from the gastro-intestinal tract and cause desposition of calcium in the bones, while the parathyroids mobilize calcium from the bones into the blood stream. While the subject of calcium is extremely complex and influenced by many factors we may conclude that the parathyroid glands govern calcium metabolism and prevent intoxication by guanidine, methyl-guanidine and other protein-split products formed in the intestines. Undoubtedly important hormonal relationship exists between the parathyroid, thyroid, ovaries, testes, and pituitary glands but these will not be discussed here for lack of space.

#### ADRENAL

The adrenal gland is composed of two distinct parts: the cortical layer arises embryologically from the mesoderm, while the medullary portion is ectodermal in origin. It has now been firmly established that the cortical portion is essential to life since extirpation is always fatal, removal of the suprarenal glands inevitably resulting in the death of experimental animals in a few days. In fact, the adrenal cortex is the only gland absolutely essential to existence. Wheeler and Vincent have demonstrated that animals survive the operative removal of all the medullary tissue in both glands, which findings have been confirmed by numerous investigators.

Although not essential to life, the hormone of the adrenal medulla performs an important function as a powerful stimulator of the autonomic nervous system. Cannon believes from his experiments upon animals that during fear, rage or anger there is an outpouring of the medullary hormone, adrenalin or epinephrine, into the blood stream which mobilizes the liver glycogen and shortens the coagulation time of blood, at the same time inhib-

iting digestive and sexual functions. That adrenalin is antagonistic to insulin is shown by its ability to mobilize liver glycogen and to counteract hyperinsulinism. Injection of the hormone also raises the blood pressure by its vasoconstrictor action upon peripheral blood vessels and its direct action upon heart muscle. By its incretory effect on endocrine and non-endocrine function it serves as an inter-relating influence between the two systems. The hormone was isolated by Takamine and Aldrich and has been produced synthetically as a racemic body by Stolz and Dakin.

Swingle and Pfiffner, Rogoff and Stewart, and Hartman have isolated active extracts from the suprarenal cortex which keep adrenalectomized animals alive and which, when injected into patients suffering from Addison's disease, produce phenomenal improvement and maintain comparatively good health in patients suffering from what was formerly a uniformly fatal disease. This substance is known to be essential to life, it lowers the blood urea when it is high, increases resistance to infection and to cold, accelerates repair of injury, and is an important factor in maintenance of body temperature and the basal metabolic rate. Adrenal cortex insufficiency has its clinical counterpart in Addison's disease which is characterized by asthenia, hypotension, emaciation, pigmentation of the skin and buccal mucosa, gastric disturbances, low sugar tolerance and decreased temperature and metabolic rate. Adenomata of the suprarenal cortex presumably resulting in hypersecretion, produce in children the clinical picture of macrogenitosomia with accelerated somatic and precocious sexual development, while in the adult female virilism, excessive hair growth, reversal of sex characteristics, hypertension, renal diabetes and physical changes characteristic of the male. It is probable that the important physiologic relationship with the pituitary, ovary, testis, and thyroid, as yet unknown, will soon be worked out and scientifically established.

#### PLACENTA

As early as 1912 Iscovesco obtained a lipid principle from the placenta which produced growth and vascularity in the tubular tract of the rabbit. In 1910 Fraenkel demonstrated that the corpus luteum is essential to pregnancy for some time after implantation has taken place. Investigations by Courier and Kehl have

shown progestin effects in late pregnancy. Progestin may be obtained from the placenta except in late pregnancy and it is certain the placenta either produces or stores progestin.

Weisner, Collip and others have demonstrated the presence of the anterior pituitary sex hormone in the human placenta. Collip believes that the placenta is the endocrine gland of pregnancy; Evans and his co-workers, on the other hand, are inclined to believe it serves as a storehouse for the secretions of other glands. Zondek is of the opinion that the pituitary sex hormone of pregnancy, prolan, is produced by both pituitary and placenta.

Phillips has produced evidence that the anterior pituitary gland in pregnancy is less active than in the non-pregnant state and that the great amount of hormone produced is placental in origin. Contrary to this evidence, Novak in a postmortem study of a case of chorioepithelioma concluded that the trophoblastic tissue causes an increase in size and function of the hypophysis with production of large amounts of prolan and subsequent leutinization effect.

Collip in 1930 extracted a fraction from the human placenta similar to estrin in physical properties, but not in physiological properties, which he has termed emmenin. It produces oestrus in immature rodents but does not influence the ovaries or tubular tract and has no effect on the genital organs of the castrate. It does not interrupt pregnancy as does oestrin when given in large doses, and unlike oestrin it is effective by mouth. This oestrus like fraction is probably a placental product, having moderate activating effect on the primordial follicles without producing the hemorrhagic cysts and hyperleutinization which follow administration of the anterior pituitary hormone. In an excellent review of the literature and from clinical studies of combined prolan and anterior pituitary therapy, Mazer and Katz conclude: "Studies now available in the literature indicate that prolan is apparently a placental hormone, not identical with the pituitary sex hormone; that prolan probably stimulates the gonado-trophic cells of the hypophysis to a moderate degree; that the anterior lobe of the hypophysis apparently produces a prohormone which, in itself, possesses no gonadotropic properties but is readily converted into an active sex hormone by prolan; and that this prohormone is neither the growth

promoting principle nor the sex stimulating hormone of the hypophysis. It is, however, present in both extracts."

#### DISCUSSION—*Dr. P. A. Staley:*

The menopause is essentially a failure of ovarian function and has no relation to the hypophysis so far as we know. Ovarian function fails largely because of fibrotic changes which replace the glandular tissue. Menopause symptoms are due to lack of the follicle hormone oestrin. There is no known relationship between the menopause and pituitary secretion.

#### THERAPEUTIC EXERCISE

In their second and concluding article on therapeutic exercise J. S. Coulter and C. O. Molander, Chicago (Journal A. M. A., Jan. 19, 1935), give both passive and active therapeutic exercises for the elbow joint, for the hand and wrist, for the hip joint, for the knee joint and for the foot and ankle. Occupational therapy is also given for the elbow, wrist and hand.

#### EXPERIENCES WITH GONOCOCCUS FILTRATE (CORBUS-FERRY) AND OTHER FORMS OF INTRADERMAL THERAPY IN TREATMENT OF GONORRHEA

Gonococcus filtrate (Corbus-Ferry) intradermally is the only antigen of the several that Robert E. Cumming and Robert A. Burhans, Detroit (Journal A. M. A., Jan. 19, 1935), have used that seem to offer a specific aid in the treatment of gonorrheal infection and complications. No attempt has been made to explain the rationale of intradermal medication or to establish the part played by the skin in body immunity. They demonstrate that the filtrate can be used alone in the treatment of gonorrhea. It is their impression that gonococcus filtrate is most serviceable as an adjunct to mild local treatment. The filtrate is indicated in acute and chronic gonorrheal infections of men, women and children. It has been used freely in all types of complications and, in their opinion, has some virtue in amelioration, although other treatment, not so important in simple urethral involvement, is of prime necessity. The authors have not followed the recommendation of Corbus but have used the filtrate freely in all stages of the infection and complications. They have departed from the recommended dosage scheme by giving not more than 0.1 cc. of filtrate (children should receive from 0.05 to 0.15 cc. of filtrate), increasing weekly by from 0.05 to 0.2 cc. (1/20-4/20), depending on the local skin, regional lymph gland, and systemic reactions as well as on the character of urethral discharge and the states of the infection. Complications are today, as they have always been, of greatest importance in gonorrhea; late and unexpected transmission of the disease, sterility in both sexes, and the determination of safety in marriage are questions peculiarly in the domain of the consulting urologist. The determination of cure in gonorrhea has always been a difficult problem. The authors believe that their use of gonococcus filtrate in large doses (from 0.1 cc. to 0.4 cc.) as a diagnostic or provocative agent to demonstrate dormant infection is a milestone in progress toward the ultimate cure of obstinate gonorrhea.



## THE USE OF DILAUDID IN GENERAL PRACTICE\*

CLIFFORD M. BASSETT, M.D.  
CUSHING

The control of pain—the most disturbing and disabling symptom in many illnesses—has been a main objective, if not the goal of many physicians, in years past. They know that to relieve pain is to give rest, to promote healing, and to earn a grateful patient. During the last 75 years the physician has been given tools to use in pain relief by the remarkable development of new chemicals and the study of their properties by pharmacologists. Various analgesic drugs have been offered and studied with an idea that opiates might possibly be eliminated, but now, as in the early days of medicine, opium, its analgesic alkaloids and derivatives of these alkaloids still appear to be the most effective clinical pain relieving agents. Opiates have their undesirable as well as their desirable effects, so to the problem of reducing or eliminating these undesirable effects the chemist and pharmacologist have devoted their study.

In 1932 Alvarez<sup>1</sup> of the Mayo Clinic reported favorably on the pain relieving qualities of a new opiate, dilaudid, a morphine derivative, which appeared to be better than morphine in many ways. About a year later Menard<sup>2</sup> of the Lahey Clinic called attention to the good results which dilaudid had given him for patients with incurable cancer. These reports aroused my interest, so I began a study to determine the use of dilaudid in general practice. Since this study began, other reports have appeared—Morrish<sup>3</sup> of St. Louis emphasized the use of dilaudid orally in chronic conditions as cancer and tabetic crisis, and Jacobs<sup>4</sup> of Georgetown University reported that dilaudid was better than morphine for relieving obstetrical pain. My work with dilaudid, chiefly in general practice and for the relief of post-operative pain, for cystoscopic examination or other minor procedures, has proved to my satisfaction the value of the drug for these conditions as well as for its use in cancer, to which attention had been called

by other observers. I am also well satisfied with dilaudid as a cough sedative.

The drug dilaudid is a morphine derivative, dihydromorphinone hydrochloride, a rearrangement of the morphine molecule. This change in chemical structure of the morphine molecule increases the analgesic effect about five times, appears to remove the constipating effect and also seems to eliminate much of the euphoric effect of morphine. My observation has shown that the nauseating and emetic effect of morphine are almost entirely absent. With one or two patients I observed a slight dizziness and confusion, but this was transient, lasting but a few minutes.

Dilaudid, in general practice, gives the physician a drug that can be employed in many varied conditions to bring relief from pain. It is a powerful analgesic, with a prompt and definite action. Following a specific dose, a corresponding certain degree of analgesia may be expected. I have given patients morphine in 1/4 grain doses only to find it necessary to repeat the dose in 30 to 40 minutes; with dilaudid I have not encountered a case that either 1/32 or 1/20 of a grain did not give complete and persistent relief. I have not found it necessary to give large doses, as the effect of dilaudid persisted for some time following its administration. In the post-operative cases many of the patients go from six to eight hours before requiring further analgesic medication.

In this series of operative cases I have found that dilaudid does not depress the respiratory system or mechanism as profoundly as morphine, and in none of the cases did the respiration fall below 18. Respiratory depression may be a symptom when a toxic dose is given but I am of the opinion that dilaudid in the usual analgesic dose produces very little respiratory depression. To date I have not determined the toxic dose of dilaudid, although I know of instances where it has been administered in doses one would consider as excessive; these large doses were given to patients with carcinoma, suffering excru-

\*Read before the Section on General Medicine, Annual Meeting, Oklahoma State Medical Association, Tulsa, 1934.

ciating pain, affording relief without noticeable untoward effects in each instance. We may later learn that the toxicity of the drug depends in a measure on the degree of pain—and that the large doses which may be given to patients with severe pain without ill effects, would be dangerous if given to patients with milder pain. In this respect dilaudid probably should be used like morphine, keeping in mind that the dilaudid dose is but about  $1/5$  the morphine dose.

In the presence of severe pain, which did not permit rest or sleep, I have given dilaudid to relieve the pain and had these patients to fall asleep within 20 or 30 minutes. The rest thus begun is probably due in most cases to the relief of the pain, with a general relaxing effect on an exhausted patient, but one also has to consider the possibility of a definite hypnotic effect. Most observers report that the hypnotic effect of dilaudid is less than that of morphine, but I believe this phase of the action of dilaudid deserves further study.

The relaxing properties are also apparent in the post-operative period as shown by the infrequent occurrence of urinary retention, requiring catheterization. It was not necessary to catheterize during the post-operative course when dilaudid was used for pain. Those patients for which catheterization was advised for a time following the operation, as for example, after perineorrhaphy, were able to void easily when allowed to do so. No doubt in a larger series it might be necessary to occasionally catheterize a patient post-operatively but if the necessity for this procedure is reduced to a minimum, that factor alone should invite the universal adoption of dilaudid over any other opiate in post-operative pain.

Dilaudid in doses of  $1/20$  grain is much more effective and pleasing than the equivalent dose of morphine grain  $1/4$  in cystoscopic examinations. The patient does not experience pain to any noticeable degree, neither does he complain of vertigo.

For the pain following the injection of hemorrhoids with sclerosing fluids, I found the rectal administration of dilaudid, in the form of a suppository, effective and prompt in action. It is not always necessary in cases of this type to administer an analgesic following treatment but occasionally severe pain does develop following an injection. The insertion of a suppository of  $1/24$  grain dilaudid gave re-

lief of pain within a few minutes, which lasted from five to eight hours. The suppository mode of administration of the drug affords the physician a means of administration to those patients who abhor hypodermic injections or where oral administration is not advisable due to some gastric disturbance.

I have also used dilaudid as a cough sedative with good results. It exhibits a sedative effect similar to heroin and in very small doses. I have used as little as  $1/20$  to  $1/10$  grain in one ounce of vehicle. It does not inhibit secretions, induce constipation, nor do the patients complain of drowsiness.

One factor which makes the drug pleasant to work with is its solubility. The time consumed in preparing hypodermic medication is greatly reduced, and this, plus rapidity of action of the drug, insures relief to the suffering patients in the shortest possible time.

I am appending a few case reports which will show my use of dilaudid in several conditions commonly encountered in general practice:

Case No. 1: M.M., male patient, age twenty-four years. Patient was awakened early in the morning of March 4, 1934, complaining of generalized abdominal pains. These pains became gradually worse and at 11:00 A.M. he came to the office. Examination revealed a tenderness over McBurney's point with a definite rigidity and rebound tenderness. Blood count 13,600 with 82 per cent polys; operation for appendicitis was advised and patient was sent immediately to the hospital. At 3:20 P.M. same day, March 4, patient received three grains of sodium amylal and at 3:25 P.M. morphine sulphate, grains  $1/4$ , and atropine grains  $1/150$ . An acutely inflamed appendix was removed under spinal anesthesia using 150 mg. novocain crystals. At 6:25 P.M. patient received  $1/20$  grain dilaudid per hypo. This dose was repeated at 11:25 P.M. On March 5 patient received  $1/20$  of dilaudid per hypo—at 4:10 A.M., 12:30 P.M., 10:10 P.M. On March 6 patient received a similar dose, at 5:10 A.M. and 10:45 P.M., this being the last analgesic or hypnotic administered. The patient received  $7/20$  grains of dilaudid during his post-operative course. The patient was dismissed from the hospital on the fourth post-operative day. It was not necessary at any time to catheterize the patient and at no time did he complain of severe pain, the dilaudid being given because of restlessness. After the administration of each dose of dilaudid the patient was relieved within five minutes. There was very little distention present.

Case No. 2: Mrs. F.W.D., age thirty-seven, was first seen two hours after she had expelled a three months fetus. The placenta was retained. Examination of abdomen revealed a large uterus with extreme tenderness on palpation to the extent that it was impossible to exert pressure on the uterus. The patient was given  $1/20$  grain of dilaudid hypodermically. Within three minutes a physiological effect was not-



ed and at the end of six minutes the placenta was expelled, the patient suffering no pain.

Case No. 3: Mrs. W.S.H., Primipara, age 33. This patient first came to the office for medical attention on December 1, 1933, complaining of a pain in the region of the left kidney. She stated that she had been passing small amounts of blood in the urine for the past twelve months. She last menstruated on July 25, 1933. Examination revealed a palpable kidney on the left side and a pregnancy of about four months duration. On December 28, 1933, a cystoscopy and pyelogram was done which revealed a calcified tumor of the left kidney. Patient still complained of a constant pain in the left kidney region, which increased as the fetus grew larger and became more active. The patient was put on dilaudid, 1/24 grains orally. This dose was repeated, usually 1 to 3 doses daily, when necessary during the remainder of the pregnancy. March 30, 1934, patient was given a transfusion of 500 cc. of citrated blood, which was repeated on April 4, 1934. At 7:20 P.M., April 5, 1934, the patient went into active labor; at 9:15 P. M. 1/32 grain of dilaudid and 3 grains of sodium amylal were given. One hour later this dose was repeated, and at 1:05 A.M. she delivered a baby girl weighing 4 pounds and 14 ounces. There appeared to be some asphyxia of the child, so she was immediately given 1 cc. metrazol in the gluteal muscle; restoration immediately. Patient had very easy labor, complained of no pain and a slight induction of ether only had to be given as the head was being delivered.

Case No. 4: Mrs. R.L.E., age 24. This patient was admitted to the hospital March 13, 1934. The following morning a corrective operation, under ether anesthesia, was performed, consisting of cauterization of cervix, perineorrhaphy, right salpingo-oophorectomy and suspension of uterus and appendectomy. Preparatory to the operation she received dilaudid 1/32 grain and atrophine 1/150 grain. During the first three post-operative days she received a total of nine doses of dilaudid, 1/32 grain. Because of the perineorrhaphy she was not allowed to void for three days, but when allowed this privilege she had no difficulty in urinating. At no time did her respiration fall below 18 and she complained of no gas, nor was there any evidence of constipation after receiving the first enema.

Case No. 5: Mrs. C., age 27, had been troubled with dysmenorrhea and menorrhagia since puberty, and as she became older she became very apprehensive during the menstrual period. The dysmenorrhea and menorrhagia was always more severe during the second day of menses, and she would then become hysterical. It was always necessary to administer some form of opiate but usually nausea and vomiting with increased nervous tension resulted. Sedatives and antispasmodics were given without avail; on several occasions glandular treatment was administered, and twice she was given a dilation and curettage which only produced temporary relief. Because of the nausea caused by the administration of morphine it was decided to use dilaudid and so at the onset of the next menses an enema was given and a rectal suppository containing dilaudid grain 1/24 was inserted; within 20 minutes the patient was relieved. Only one dose of dilaudid was necessary during the entire period and she did not develop any nausea.

Case No. 6: A child twenty-two months of age ran a splinter under the finger nail while playing. The finger became infected and in about a week from the time of injury the finger nail came off. Approximately 15 days from day of injury the child's arm became stiff and he could not feed himself. This

symptom was followed rapidly with inability to open the mouth, marked tonic spasms of muscles of face, neck, arms, and legs and finally a severe opisthotonos. A diagnosis of tetanus was made and the child was given dilaudid grains 1/40 subcutaneously. In twenty minutes enough relaxation was obtained so that a spinal puncture could be done and 10,000 units of tetanus antitoxin introduced into the spinal course. The child was then given dilaudid grain 1/80 every 2 to 3 hours for three days and 10,000 units of tetanus antitoxin intravenously daily for the same period. After which time all symptoms of tetanus had disappeared. The patient received in all 40,000 units of tetanus antitoxin and approximately 1/3 grain of dilaudid. There was apparently no respiratory depression caused by the dilaudid, no nausea or vomiting and excretory organs functioned normally. From then on recovery was uninterrupted.

In conclusion let me say that I believe in dilaudid the profession has available an analgesic drug which has definite advantages over morphine, since it exerts a powerful analgesic effect in small doses, which is manifested quickly and is prolonged. With dilaudid the tendency toward untoward side-actions, such as nausea, constipation and urinary retention, is less than with morphine. In my experience dilaudid has proved to be more desirable than heroin for the control of coughs.

DISCUSSION—*Dr. A. W. Pigford*, of Tulsa:

Dr. Bassett asked me to discuss his paper, due to the fact that the man he had asked to discuss it has left town.

My experience in these cases has been very much limited—to possibly thirty cases. Three of these were renal colic. In only one of the three was it necessary to repeat dilaudid, two being relieved with one hypodermic. The other cases were post-operative.

I find that when morphine is being used with bad effect—such as causing nausea, vomiting, headache, dizziness, and apprehension—by substituting dilaudid these unpleasant effects are overcome.

In chronic cases where a narcotic has to be continued, dilaudid is much preferred to morphine. This is especially true in carcinoma cases.

I get from the literature that dilaudid is non-habit-forming, again making it much more satisfactory. Personally, I have not had the experience of continuing it for an indefinite time.

#### CONCLUSION

*Dr. Clifford M. Bassett*: I wish to thank you for your kind attention and Dr. Pigford for his interesting discussion.

In my work with dilaudid I have observed some very interesting and gratifying results. It has without a doubt some

very definite advantages over morphine, and I am of the opinion that this drug is entitled to a thorough trial by the medical profession.

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#### PERIARTERITIS NODOSA: REPORT OF CASE WITH FATAL PERIRENAL HEMORRHAGE

George K. Wever and Isabella H. Perry, San Francisco (*Journal A. M. A.*, April 20, 1935), cite a case of periarteritis nodosa that presented a clinical picture simulating an acute surgical condition of the kidney so closely that nephrectomy was performed. The patient was referred to the hospital by his private physician because of a suspected renal stone. After the first period of observation a diagnosis of chronic nephritis was made. Six months later a diagnosis of perirenal abscess seemed justified and an operation was performed. A perirenal hematoma was found and the kidney with the surrounding hematoma was removed. The patient died ten hours after the operation from another massive hemorrhage into the renal fossa. The frequent involvement of the kidney in this disease has been emphasized by Gruber and by Arkin. The usual clinical signs pointing to the kidney are those of a nephritis and consequently the most frequent clinical diagnosis has been "hemorrhagic nephritis". In at least eight cases of periarteritis nodosa found in the literature, death has been due to renal or perirenal hemorrhage. Goldstein and Wexler have described the pathologic changes in the retinas of a patient dying with periarteritis nodosa, suggesting the possibility of ophthalmoscopy being of aid in recognizing the periarteritis nodules on the choroidal vessels. The ophthalmoscopic picture thus far described in patients with periarteritis nodosa does not seem to be characteristic of the disease, but it is possible that in some cases correct diagnosis may be attained by the finding of tubercle-like lesions on the choroidal vessels. On the other hand, this finding might serve to confuse the diagnosis by bringing up the possibility of tuberculosis. In the authors' case the retinal changes were those of albuminuric retinitis. The long standing hypertension, with its resulting sclerotic changes, and the nephritis would readily explain the picture. Roentgenographic studies of the chest showed the lung fields to be clear. The general symptoms of this disease are those of any acute or chronic sepsis. The local manifestations are extremely variable because they are governed by the site of localization of the vascular lesions. Correct diagnosis during life is therefore very difficult. The hope for more accurate diagnosis of periarteritis nodosa during life lies in the recognition of the existence of such a disease by the clinician and the inclusion of it in the differential diagnosis of unusual medical and surgical problems. The etiology of periarteritis nodosa is obscure. Various theories have been advanced, the most acceptable of which proposes that the disease is infectious in origin. The very nature of the pathologic lesions suggests an infectious etiology. At the present time neither a filtrable virus nor a nonfiltrable micro-organism has been demonstrated as the causative agent. Culture of a smear taken from a mesenteric nodule at the time of necropsy of the authors' patient showed staphylococcus albus, performed eleven hours after death. The pathologic studies suggest that the causative agent

has a predilection for arteries. It produces a patchy destruction of the media. The lesions tend to heal but complete morphologic and functional recovery does not take place. An aneurysm may develop in the weakened wall, or the lumen may be reduced or obliterated by the scar. The aneurysms, when they occur, may be completely walled off from the circulation and may show organization throughout. The lesions are not all in the same stage of the disease at the same time. In the present case the aneurysms were frequently found at the bases of the small arteries immediately distal to the point of branching from larger vessels. A tentative mechanical explanation of this finding is suggested by the fact that the intravascular pressure in the branching artery is highest at its base and diminishes progressively toward the periphery. The wall of the damaged vessel would be most likely to give way and form an aneurysmal dilation in the region of greatest internal pressure.

#### TREATMENT OF PELLAGRA

Tom D. Spies, Cleveland (*Journal A. M. A.*, April 20, 1935), describes a method of treatment that was found highly successful in the management of 125 cases of severe pellagra. Adequate professional and nursing care are essential. All patients with pellagra must have sufficient rest and those who are severely ill must be confined to bed until their improvement warrants additional freedom. Large doses of sedatives are often necessary to accomplish this, but under no condition should they be given in amounts large enough to interfere with the patient's cooperation over long periods of time. Professional care is essential in order that the pellagrins may receive a well balanced diet containing 4,000 calories or more each day. In the most severely diseased patients the physician must supervise every detail of food taken to make sure that an adequate diet is utilized. It is often necessary for him to cooperate with and instruct the attending nurse and dietitian to see that the food is given in proper amounts at specified times. The physician must see the patient often so that the amount of food lost through vomiting or diarrhea may be evaluated and corresponding additional amounts given. Good nursing care conserves the patient's strength, thus making it possible for him to obtain more rest, which helps promote the effective use of ingested food. Adequate professional and nursing care are also necessary in the local treatment of the lesions, which often makes the patient feel more comfortable and for that reason is desirable, though not necessary in effecting the cure. Coexisting diseases must be treated as well as the pellagrous condition itself. The specific therapeutic agents are yeast, desiccated hog stomach, wheat germ and liver extract. The choice of any one of the therapeutic agents should be based on the advisability of the material, the severity of the disease, and the ability of the patient to cooperate. All agents must be given in large amounts in order to remit the disease quickly. The special symptoms requiring treatment are stomatitis and glossitis, diarrhea, vomiting, abdominal pain, manifestations of involvement of the central nervous system, anemia and dermatitis. The author states that by the personal application of the principles of treatment outlined, the mortality rate of the 125 severely diseased pellagrins was lowered (from 54 per cent in an earlier series) to 6 per cent. Pellagra could not be considered the sole cause of death in any one of the eight patients who died, as each had extensive involvement of vital organs by other disease processes. In nearly every instance the pathologic changes of fatal disease other than pellagra were ample explanation for death. In four of the cases the pellagrous lesions had healed prior to death.



# President's Page

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## THE FAMILY PHYSICIAN

The statement is frequently made that the family physician is disappearing—that he is being supplanted by clinics and specialists. If this is true it is extremely unfortunate, because no one is more intimately associated with individuals and families and groups of people than the family physician.

But let us examine the statement about his disappearance—let us examine it and try to make an analysis of the situation. In making this analysis, it appears that the most convenient way is to lay down one or two propositions, discuss them, and see what conclusions can be reached.

*First Proposition:* The disappearance or the non-disappearance of the family physician are eventualities that can be largely determined by the family physician himself.

If he does not wish to disappear he must have an accurate realization of the requirements of modern medicine. He must realize that he is living in an era of rapid change and no less rapid progress, and in order to adapt himself to the requirements and necessities of this new era he must advance, his advancement being based upon a clear conception of the functions of medicine which are to preserve health and prevent and cure diseases and abnormalities of human beings. Now those were the functions of medicine in the days of Hippocrates, but Hippocrates, even though he lived in the golden age of Pericles; even though he employed all the available knowledge of ancient Greece; even though he was endowed with wisdom, was not able to render the service required of the family physician thirty or forty years ago. Even so, the physician of forty years ago, or twenty years ago or even a few years ago, was not able to render the service required in the year 1935, because in these decades and in these years facts have taken the place of theories and logical, scientific medicine now occupies the professional citadel then partly held by the forces of empirical medicine.

What, then? Simply this: The family physician, if he wishes to keep his place, must be able and willing to render the service that modern medicine demands today.

*Second Proposition:* The physician must not only be as profound in the learning of his profession as he can be, but he must cultivate the sense and quality of wise discrimination. In doing this he ought to remember that the character, rapidity and sequence of symptoms and signs, plus an adequate physical examination are by far the most essential requirements in the investigation of disease and abnormality. He ought to remember that his most important equipment is in connection with his ability and disposition to think, to reason, to know; and in connection with his ability and disposition to employ his special senses. He who has such equipment carries with him the most invaluable means of performing the functions of his profession. He may be in the country or in the city, but no matter where he is he has the consciousness of knowing that preparation for the practice of medicine does not depend primarily upon locality or environment, but upon the preparation, aspirations, determination and industry of the individual physician.

The employment of instruments of precision is of great importance, but their employment is for the distinct purpose of adding to a sane and fundamental conception of the functions of the physician. They are not employed for the purpose of taking the place of fundamental preparation and fundamental procedures.

There have been great family physicians in the past, and they have contributed much to the unparalleled progress of medicine. Ephraim McDowell and Crawford W. Long; Beaumont, Loomis and Osler—these form a part of that illustrious galaxy, and joined with such men are thousands of others, even now, living in town and country, and all of them contributing to the efficiency of medicine and to the success and happiness of the human race.

# THE JOURNAL

OF THE

## Oklahoma State Medical Association

Issued Monthly at McAlester, Oklahoma, under direction of the Council

VOL. XXVIII MAY, 1935. No. 5

DR. L. S. WILLOUR.....Editor-in-Chief  
McAlester, Oklahoma.

DR. P. P. NESBITT.....Associate Editor  
Medical Arts Building, Tulsa, Okla.

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Reprints of original articles will be supplied at actual cost provided requests for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, 203 Ainsworth Building, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

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### EDITORIAL

#### MEDICAL CARE

It is quite evident that the subject of medical care as a part of the program for social security will of necessity be considered by the physicians of this country. A "hands off" attitude will not solve the problem, as it appears certain that there will be some modification of the present plan. If a change is to come the medical profession must have some very definite ideas as to how the problem should be handled and be prepared to supervise its institution, development and operation.

Compulsory sickness insurance will not be a part of the Wagner Bill when reported from the committee; however, it is be-

ing attempted in many states and may in the near future become a part of the national program.

This subject will be discussed by Dr. Leland before the House of Delegates at their meeting Monday evening and it is important that every delegate hear this man who has more information on the subject than any other person connected with organized medicine. Dr. Leland will also appear before the General Session Tuesday morning and will give to the profession of the state the very latest information along this line.

### Editorial Notes—Personal and General

DR. JOHN A. HATCHETT, Oklahoma City, is reported ill at his home.

DR. D. L. PERRY, Cushing, has been appointed Payne County health superintendent.

DR. F. H. NORWOOD, Prague, has been appointed health officer for Lincoln County.

DR. G. H. STAGNER, Erick, who has been ill for the past few weeks, is reported improving.

DR. CATHERINE BRYDIA, Ada, has been appointed county health officer of Pontotoc County.

DR. J. C. REMBERT, Okmulgee, has been appointed county superintendent of health of Okmulgee County.

DR. W. A. TOLLESON, Eufaula, who has been confined to the Oklahoma Baptist Hospital at Muskogee with a broken ankle, has returned to his home.

### News of the County Medical Societies

WOODWARD COUNTY MEDICAL SOCIETY held their regular meeting April 9th at Woodward and the following program was presented:

Dinner at seven.

Woman's County Auxiliary meeting.

Scientific program:

"Low Back Strain," Dr. Chas. Rombold, Wichita.

"Coronary Disease," Dr. Fred McEwen, Wichita.

"Hemorrhoids, Infected Ducts," Dr. Claude Tucker, Wichita.

General Discussion, Dr. Hibbard, Wichita

### ANNOUNCEMENT

Academy of Physical Medicine. Annual Meeting June 12 and 13. The Claridge Hotel, Atlantic City, New Jersey. For further information address Arthur H. Ring, M.D., Secretary-Treasurer, Arlington, Mass.



### DOCTOR NEWTON RECTOR

Dr. Newton Rector, pioneer physician of Hennessey, age 96, died March 18, 1935, after a short illness. He was born September 12, 1838, near Chillicothe, Ross County, Ohio. His early education was received in Illinois. He enlisted in the war between the states in 1862, and upon being injured was sent to a hospital at Nashville, Tenn., where he became an assistant to the surgeon in charge, while convalescing. This experience inspired him to study medicine, which he did, graduating from Nashville Medical College in 1874. In 1889 Dr. Rector came to Hennessey where he remained until the time of his death.

Burial was in the Hennessey cemetery.

### DOCTOR CHARLES W. AUSTIN

Dr. C. W. Austin, 74 years of age, physician of Mangum, died April 3rd, after a serious illness of several weeks.

Dr. Austin was born in Tennessee, December 14, 1860. He was reared on a plantation in Tennessee where he received his preliminary education in the public schools. He was graduated from Hardin College at Savannah. He attended the Memphis Hospital Medical College from which he graduated in 1895. He began his practice of medicine in Lowryville, Tenn. He came to Granite in 1901, moving to Mangum in 1919, where he remained until the time of his death.

Dr. Austin is survived by his wife and four sons.

Interment was in the Granite cemetery.

normal in six. A mild to moderate degree of anemia was present in five cases. Five of the patients were admitted to the hospital in a state of alkalosis, which had followed the daily ingestion of from 15 to 60 Gm. of alkali for from two to four months. In two cases alkalosis developed in the hospital while the patients were on a modified Sippy regimen, receiving about 14 to 16 Gm. of alkali daily. The symptoms of distaste for milk, anorexia, nausea and vomiting, weakness, nervousness, mental confusion, dull steady headache, polydipsia and polyuria, numbness and tingling, cramps and, in several instances, tetany were quite outstanding in these cases. Other evidence of renal injury was denoted by protein, casts or erythrocytes in the urine. The possibility of alkalosis in the treatment of peptic ulcer should be kept in mind constantly. The phenomenon usually comes on gradually. The symptoms of distaste for milk, of headache and of weakness are constant, and they occur early. They are noted in the period of compensated alkalosis prior to the characteristic changes in the chemistry of the blood that follow. The other symptoms referred to appear later. Impaired renal function was demonstrated in all the cases during alkalosis. Two of the patients had definitely associated vascular changes. The status of the kidneys should be determined in each case before the patient is placed on alkaline powders. If impairment exists, alkaline treatment will probably be unsatisfactory. In these cases alkalosis may be rectified by smaller doses of alkalis or by replacement of such alkalis with mucin or tribasic calcium phosphate. However, the administration of these substances may result in toxemia. In one case renal studies gave normal results prior to and following alkalosis, yet with the ingestion of alkalis the carbon dioxide combining power rose to 70 volumes per cent and there was definite renal insufficiency. The development of alkalosis and renal insufficiency in another case cannot be explained by the assumption of a previous renal lesion for, subsequent to toxemia, the patient had normal renal function. The kidney has many functions, and it may be normal in one and deficient in another of these functions. The authors believe that in the presence of renal insufficiency, the threshold of safety is less, and that alkalosis is more easily produced in the presence of a pre-existing renal injury and that renal injury is increased concurrently with alkalosis, and thus a vicious cycle is set up. Neither basic nor acid salts can be administered with impunity in the presence of renal impairment. In the presence of normal renal function, the buffer mechanism maintaining the acid base equilibrium can absorb the assault of either acidifying or basic salts with little or no variation. The liver plays an important part in maintaining the acid-base equilibrium and in the presence of hepatic insufficiency, this is much more easily disturbed, as is evidenced by the intolerance, in cases of cirrhosis, to ingestion of either acid or basic salts.

### THE TRUE ECONOMY OF DEXTRI-MALTOSE

It is interesting to note that a fair average of the length of time an infant receives Dextri-Maltose is five months: That these five months are the most critical of the baby's life: That the difference in cost to the mother between Dextri-Maltose and the very cheapest carbohydrate, at most is only \$6 for this entire period—a few cents a day: That, in the end, it costs the mother less to employ regular medical attendance for her baby than to attempt to do her own feeding, which in numerous cases leads to a seriously sick baby eventually requiring the most costly medical attendance.

### THE STATUS OF KIDNEYS IN ALKALOSIS

Edmund H. Berger and Melvin W. Binger, Rochester, Minn. (Journal A. M. A., April 20, 1935), studied seven cases in which there were definite symptoms and serologic evidences of alkalosis following intensive use of alkali in the treatment of peptic ulcer. The patients were men between thirty and forty-nine years of age, with the exception of one who was seventy. Five patients had duodenal ulcers, one a perforating carcinoma of the stomach and in one an ulcer was not demonstrable. None had a previous history of nephritis. The blood pressure was

### SPONTANEOUS HEMOPNEUMOTHORAX: CASE

In a case of spontaneous hemopneumothorax, with recovery, in a young man, and thirteen collected cases from the literature, Joseph L. Frey, New York (Journal A. M. A., April 20, 1935), finds that no definite etiology is demonstrable, but three of the previously reported cases point strongly to a torn pleural adhesion and a ruptured emphysematous bulla or bleb as the cause. All cases reported, including the present one, occurred in the male. Aspiration of the blood is the procedure of choice.

# PROGRAM

## FORTY-THIRD ANNUAL SESSION, OKLAHOMA STATE MEDICAL ASSOCIATION, OKLAHOMA CITY, MAY 13, 14, 15, 1935

*Meeting Place*—All meetings will be held in the Skirvin Hotel. Telephone, local (Oklahoma City) 2-1251; L. D. 122.

*Registration*—Rose Room, thirteenth floor, Skirvin Hotel. Please see that you are in good standing for 1935 before attempting to register.

*Council*—Will meet Monday, May 13th, 3:00 P.M., for the transaction of business affairs in Dr. Willour's room. After that on call of the body.

*House of Delegates*—Will meet Monday, May 13th, 7:30 P.M., Empire Room, mezzanine floor, and at 8:00 A.M., Tuesday, May 14th, same place.

*Delegates*—Should present their credentials to the Credentials Committee, Registration desk, thirteenth floor, prior to this meeting.

*Credentials Committee*—Doctors McLain Rogers, Clinton; W. A. Howard, Chelsea.

*Oklahoma City Pediatric Society*—Will meet Monday, May 13th, Children's Hospital and Crystal Room, Skirvin Hotel.

*Guests of Honor*—Dr. Chas. M. Pearce, Oklahoma City; Dr. F. R. Teachenor, Kansas City, Mo.; Dr. R. G. Leland, Chicago; Dr. Max Thorek, Chicago; Dr. M. Edward Davis, Chicago.

*Medical Reserve Corps Dinner*—Tuesday, May 14th, 6:00 P.M., Skirvin Hotel. Colonel E. A. Keys, Chief of the Staff of the 95th Division, will be the guest speaker. Reservations should be made through Dr. S. F. Wildman, Medical Arts Building, and Major W. B. Kenworthy, Federal Building, Oklahoma City.

Commercial and Scientific Exhibits will be placed in the Rose Room, 13th floor.

*Discussion of Papers*—Every physician proposing to open the discussion of any paper should attempt to secure a copy of same for his information before the meeting.

*Telephone Service*—Those expecting telephone calls should place their probable location at the telephone office on the ground floor.

### GOLF

MONDAY, MAY 13TH

Annual Tournament, \*Oklahoma City Golf and Country Club (Nichols Hills), starting at 9:00 A.M. Transportation from the Skirvin Hotel will be provided. All green fees paid.

TUESDAY, MAY 14TH, AND WEDNESDAY,  
MAY 15TH

All members of the State Medical Association may play at any of the following courses, green fees paid by person playing:

Oklahoma City Golf and Country Club.  
Twin Hills Golf Club.  
Edgemere Golf Course.  
Lakeside Country Club.  
Lincoln Park Golf Course.

*Committee*—Drs. Leo F. Cailey and Wayman J. Thompson.

Prizes donated by Oklahoma City business firms.

### GENERAL SCIENTIFIC SECTION

General Scientific Sections will be held, beginning at 8:45 A.M., in the Venetian Room, thirteenth floor:

TUESDAY, MAY 14TH

8:45 to 9:30 A.M.—Moving pictures.

9:30 to 10:00 A.M.—“Public Health and Organized Medicine in the State of Oklahoma”—Dr. Charles M. Pearce, State Health Commissioner, Oklahoma City.

10:00 to 11:00 A.M.—“The Management of Brain Injury”—Dr. F. R. Teachenor, Kansas City, Mo.

11:00 to 12:00 A.M.—“Changes Confronting Modern Medicine”—Dr. R. G. Leland, Chicago.

WEDNESDAY, MAY 15TH

8:45 to 9:30 A.M.—Moving pictures.

9:30 to 10:00 A.M.—Memorial Ceremony.



10:00 to 11:00 A.M.—“Modern Trend in Surgery”—Dr. Max Thorek, Chicago.

11:00 to 12:00 A.M.—“Treatment of Toxemia Late in Pregnancy”—Dr. M. Edward Davis, Chicago.

## GENERAL MEETING

TUESDAY, MAY 14TH

8:00 P.M.

Empire Room, mezzanine floor, Skirvin Hotel, Dr. Henry H. Turner, General Chairman, Presiding.

*Invocation*—Rev. A. G. Williamson, President, Oklahoma City University.

*Introduction of Guests*—Dr. Henry H. Turner.

*Address of Welcome*—Dr. Rex Boland, President, Oklahoma County Medical Society.

*Response*—Dr. James C. Johnston, McAlester.

*Introduction of President-Elect*—Dr. LeRoy Long, Oklahoma City, retiring President.

*President's Address*—Dr. L. H. Ritzhaupt, Guthrie.

9:30 P. M.

*President's Reception and Dance*—Venetian Room, thirteenth floor.

## MEMORIAL CEREMONY

WEDNESDAY, MAY 15TH

9:30-10:00 A.M.

Dr. Everett S. Lain, Presiding

*Invocation*—Rev. John R. Abernethy, D. D., Pastor Epworth Methodist Church, Oklahoma City.

*Solo*—Dr. Roy Maxwell, Oklahoma City.

*Report of the Necrology Committee*—Dr. A. S. Risser, Chairman, Blackwell.

*Memorial Address*—Dr. Robert M. Anderson, Shawnee.

*Musical Number*—Violin Obligato—Mrs. Ray Edwin Miles; Mr. Edwin A. Flinn, accompanist, Oklahoma City.

*Benediction.*

## WOMAN'S AUXILIARY

Message From the State President.

Oklahoma City is making plans for the entertainment of the wives of Oklahoma's doctors at the annual meeting, May 13, 14 and 15. The business meeting on Tuesday at 10:00 A.M. is open to all visiting doctors' wives. If you have no county auxiliary you may become a member-at-large if you wish. The visit to Nan Sheet's Studio will be a great treat for she has recently added a new wing so as to house a large exhibit. The tea will be a delightful affair, I am sure. All visiting wives will be guests at the luncheon on Tuesday. Please register at the Skirvin Hotel when you arrive so our hostess will be able to estimate the number to be entertained. You will receive tickets for the social events at the registration desk.

HATTIE B. ROWLAND.

## PROGRAM

MONDAY, MAY 13TH

Registration, Skirvin Hotel Mezzanine Floor.

TUESDAY, MAY 14TH

9:00 A.M.—Meeting of the State Executive Board, Skirvin Hotel.

1:00 P.M. Luncheon, Oklahoma-University Club.

2:00 P.M. Visit to Nan Sheet's Art Studio, 2810 N. Walker.

4:00 to 6:00 P. M. Tea in the home of Mrs. A. L. Blesh, 920 N. W. 20th Street.

9:00 P.M. President's Reception, Skirvin Hotel.

WEDNESDAY, MAY 15TH

1:00 P.M. State Executive Board Luncheon, Y. W. C. A.

## SECTIONS

All Sections will meet at 1:30 P.M., Tuesday, May 14th, and at the same hour on Wednesday, May 15. Meeting places will be as follows:

*Surgery*—Venetian Room—on the roof.

*Medicine*—Crystal Room—mezzanine floor.

*Obstetrics and Pediatrics*—Empire Room—mezzanine floor.

*Eye, Ear, Nose and Throat*—Wilson Room—mezzanine floor.

*Urology and Dermatology*—Parlor G—mezzanine floor.

## OKLAHOMA PEDIATRIC SOCIETY

MONDAY, MAY 13TH

*President*—C. V. RICE, Muskogee.*Secretary*—BEN H. NICHOLSON, Oklahoma City.*Morning Session*  
(9:00 A. M.)

University Hospital

*"Presentation of Cases"*—WENDELL SMITH and MARY ELLA GEORGE, Oklahoma City.*"Clinical Pathological Conference"*—FANNIE LOU BRITTAINE-LENEY and HUGH JETER, Oklahoma City.*"Clinical Pathological Conference"*—GEORGE GARRISON and HUGH JETER, Oklahoma City.

12:30 P.M. Round Table Luncheon—Crystal Room, Skirvin Hotel.

*"The State Pediatric Society and the American Academy of Pediatrics Need Each Other"*—C. H. HALL, Oklahoma City.*"Economics and the Practice of Pediatrics"*—CARROLL M. POUNDERS, Oklahoma City, assisted by BRUCE KNICKERBOCKER, Dallas.*Afternoon Session*  
(2:00 P. M.)

Crystal Room, Skirvin Hotel

*"President's Address"*—C. V. RICE, Muskogee.*"Nutrition of the New Born"*—J. B. SNOW, Oklahoma City. Discussion opened by RALPH BOWEN, Oklahoma City, and C. T. HINSHAW, Wichita, Kansas.*"Convulsions of the New Born"*—HUGH GRAHAM, Tulsa. Discussion opened by T. H. MCCARLEY, McAlester, and R. J. REICHERT, Moore.*"Habit Training of the Infant"*—A. L. SALOMON, Oklahoma City. Discussion opened by COYNE CAMPBELL, Oklahoma City, and F. L. MENEHAN, Wichita, Kansas.*"Hemorrhagic Problems and Jaundice of the New Born"*—ED. C. WHITE, Muskogee. Discussion opened by JOHN R. CALLAWAY, Pauls Valley, and FRANK LATTIMORE, Kingfisher.*"Principles Involved in the Surgical Diseases of the New Born"*—JOHN BURTON, Oklahoma City. Discussion opened by GEORGE KIMBALL and GEORGE MECHLING, Oklahoma City.

## ELECTION OF OFFICERS

(Papers will be limited to 10 minutes, opening discussions to 5 minutes each and general discussions to 3 minutes.)

## SECTION ON GENERAL SURGERY

Venetian Room—Thirteenth Floor

*Chairman*—RAYMOND L. MURDOCH, Oklahoma City.*Vice-Chairman*—H. D. MURDOCK, Tulsa.*Secretary*—N. W. MILLS, Snomac.

TUESDAY, MAY 14TH

1.15 P.M.

*"Chairman's Address—"Cancer of the Colon and Rectum"*—RAYMOND L. MURDOCH, Oklahoma City.*"Cancer of the Breast"*—FRED CRONK, Tulsa.*"Points in the Diagnosis of Cancer"* (Lantern Slides)—B. B. COKER, Durant.*"X-Ray and Radium Treatment of Cancer"*—E. S. LAIN and MARION M. ROLAND, Oklahoma City.*"Surgical Treatment and Management of Cancer Cases"*—PAT FITE, Muskogee.*"Diagnosis and Treatment of Ano-Rectal Diseases"* (Moving Pictures)—FRED CAMPBELL, Kansas City, Mo.*"Congenital Anomalies of the Rectum and Colon"*—V. K. ALLEN, Tulsa. Discussion by FRED CAMPBELL, Kansas City, Mo.*"Colles Fractures"*—A. RAY WILEY, Tulsa. Discussion by EARL MCBRIDE, Oklahoma City; J. J. BATCHELOR, Oklahoma City; J. E. HARBISON, Oklahoma City.*"Hysterectomy—A Comparison of the Vaginal and Abdominal Types"*—(Lantern Slides)—F. A. HUDSON, Enid. Discussion by A. R. SUGG, Ada; M. E. STOUT, Oklahoma City; G. K. DICKSON, Oklahoma City.*"Toxic Goiter"*—J. C. BROGDEN, Tulsa. Discussion by R. M. HOWARD, Oklahoma City; LEROY D. LONG, Oklahoma City.*"Appendicitis in Children"*—A. S. RISER, Blackwell. Discussion by C. M. POUNDERS, Oklahoma City; J. L. PATTERSON, Duncan.*"Present Status of Lung Compression and the Treatment of Pulmonary Tuberculosis"*—MCLAIN ROGERS, Clinton. Discussion by HORACE REED, Oklahoma City; P. M. MCNEILL, Oklahoma City.*"Electro-Surgical Obliteration of Gallbladder vs. Classical Cholecystectomy"* (Motion Pictures and Lantern Slides)—MAX THOREK, Chicago. Note: Dr. Thorek's presentation continued to the first afternoon hour on Wednesday, if necessary, with a re-run of movie film if desired.



WEDNESDAY, MAY 15TH

1:15 P.M.

*"Reducing the Mortality Rate in Cases of Perforated Appendices"*—J. T. COLWICK, Durant. Discussion by F. L. CARSON, Shawnee; C. E. CLYMER and H. D. COLLINS, Oklahoma City.

*"Technical Points in the Prevention of Recurrence in Herniotomy"*—R. A. WOOLSEY, St. Louis, Mo.

*"Epigastric Hernia—Case Report With Strangulated Stomach Wall"*—H. L. FARRIS, Tulsa. Discussion of hernia papers by ROY EMANUEL, Chickasha; CURT VON WEDEL, Oklahoma City.

*"A Mask of Maskers—Duodenal Ulcer vs. Perforation"*—JOHN PERRY, Tulsa. Discussion by A. W. WHITE, Oklahoma City; RALPH MCGILL, Tulsa.

*"Bone Grafts in the Upper Extremities"* (Lantern Slides)—W. K. WEST, Oklahoma City. Discussion by FRANK A. STUART, Tulsa.

*"Report on Series of Trans-Urethral Prostatic Resection"*—HENRY S. BROWNE, Tulsa. Discussion by R. H. AKIN, Oklahoma City.

*"Subtotal vs Complete Hysterectomy"*—HUGH JONES, Oklahoma City. Discussion by L. E. LAMB, Clinton; GRIDER PENICK, Oklahoma City.

Brief Summaries of the Indications for the Anesthetics, as follows:

Avertin (per rectum)—FRED WOODSON, Tulsa.

Spinal Anesthetics—ROSCOE WALKER, Pawhuska.

Cyclopropane (Inhalation)—GEORGE MECHLING, Oklahoma City.

Ethyl Chloride (Inhalation)—A. L. GUTHRIE, Oklahoma City.

Evipal (Intravenous)—J. H. ROBINSON, Oklahoma City.

Nupercaine (Infiltration)—F. M. LINGENFELTER, Oklahoma City.

Ether (Inhalation)—LEROY LONG, SR., Oklahoma City.

Note: Reading time for essayists with individual papers, 12 to 15 minutes; a copy should be sent at once to the first doctor listed to discuss it.

SECTION ON GENERAL MEDICINE

Crystal Room—Mezzanine Floor

TUESDAY, MAY 14TH

1:30 P.M.

Chairman—F. G. DORWART, Muskogee.

Vice-Chairman—BERNARD L. BRANLEY, Tulsa.

Secretary—S. C. SHEPARD, Tulsa.

1:30 Chairman's Address—F. C. DORWART, Muskogee.

1:45 *"Pernicious Anemia"*—GEORGE E. KNAPPENBERGER, Kansas City, Mo.

2:30 *"Hyperpyrexia As a Therapeutic Measure"*—S. C. SHEPARD, Tulsa.

3:00 *"Pulmonary Heart Diseases"*—HOMER RUPRECHT, Tulsa.

3:30 *"Peptic Ulcer"*—FRED H. CLARK, El Reno.

4:00 *"Preliminary Observations on Vitamin A Deficiency as Shown by Studies With Visual Photometer"* (Lantern Slides)—IRA O. PARKS, Muskogee.

4:30 *"Silicosis"*—R. M. BOLLINGER, Henryetta.

WEDNESDAY, MAY 15TH

1:30 P.M.

1:30 *"Tuberculosis From General Practitioner's Standpoint"*—R. M. SHEPARD, Tulsa.

2:00 *"Dual Nature of Intractable Asthma"*—RAY M. BALYEAT, Oklahoma City.

2:30 *"Treatment of Arthritis by Specific Vaccines"*—E. GOLDFAIN, Oklahoma City.

SECTION ON EYE, EAR, NOSE AND THROAT

Wilson Room—Mezzanine Floor

TUESDAY, MAY 14TH

1:30 P.M.

Chairman—HENRY S. BROWNE, Ponca City.

Vice-Chairman—WILLIAM MILLER, Guthrie.

Secretary—E. GORDON FERGUSON, Oklahoma City.

Chairman's Address: *"Some Observations on the Changing Times"*—HENRY S. BROWNE, Ponca City.

*"Convergence Insufficiency: Etiology, Symptoms and Treatment"*—A. W. MC-ALISTER, III, Kansas City, Mo.

*"Sympathetic Ophthalmia"*—CHAS. H. HARALSON, Tulsa.

*"Serpiginous Ulcer"*—K. G. PARKS, Oklahoma City.

*"Prevention of Infection"*—C. W. WILLIAMS, Pawhuska.

WEDNESDAY, MAY 15TH

1:30 P.M.

*"Cranial Nerve Signs of Intra-Cranial Pathology"*—HARRY WILKINS, Oklahoma City.

*"Chronic Glaucoma" or "Tuberculosis of the Eye"*—M. K. THOMPSON, Muskogee.

*"Acute Nasal Sinusitis"*—U. C. BOON, Chickasha.

*"Tonsillectomy, Its Common Problems As Seen by the General Practitioner After Frequent Removal"*—R. E. ROBERTS, Stillwater.

#### SECTION ON OBSTETRICS AND PEDIATRICS

Empire Room—Mezzanine Floor

TUESDAY, MAY 14TH

*Chairman*—J. B. ESKRIDGE, JR., Oklahoma City.

*Vice-Chairman*—HUGH EVANS, Tulsa.

*Secretary*—GEO. H. HARRISON, Oklahoma City.

*"Tuberculosis Complicated by Pregnancy"*—J. T. WOODBURN, Muskogee. Discussion by E. P. ALLEN, Oklahoma City.

*"Clinical Analysis of 100 Cases of Convulsive Eclampsia"*—DICK LOWRY, Oklahoma City. Discussion by G. R. OSBORNE, Tulsa.

*"Diagnosis and Treatment of Hemorrhage Late in Pregnancy"*—M. EDWARD DAVIS, University of Chicago, Chicago, Ill.

*"Sterility"*—P. N. CHARBONNET, Tulsa. Discussion by W. W. WELLS, Oklahoma City.

*"The Value of Prenatal and Postnatal Care"*—J. C. WAGNER, Ponca City. Discussion by FLOYD GRAY, Oklahoma City.

*"Abdominal Pain in Pregnancy"*—M. J. SERWER, Oklahoma City. Discussion by L. G. NEAL, Ponca City.

*"Complications of Posterior Position"*—CARL SIMPSON, Tulsa. Discussion by CHAS. E. WHITE, Muskogee.

WEDNESDAY, MAY 15TH

*"Diabetes Mellitus"*—LAVERNE HAYES, Tulsa. Discussion by FANNIE LOU BRITAIN LENEY, Oklahoma City.

*"Thymus in Children"*—HUGH GRAHAM, Tulsa. Discussion by G. H. GARRISON, Oklahoma City.

*"Blood Dyscrasias in Childhood"*—HUGH JETER, Oklahoma City. Discussion by F. S. ETTER, Bartlesville.

*"Diarrhea of Children"*—W. M. TAYLOR, Oklahoma City. Discussion by E. R. BRADLEY, Tulsa.

#### SECTION ON UROLOGY, SYPHILOLOGY AND DERMATOLOGY

Parlor G—Mezzanine Floor

TUESDAY, MAY 14TH

1:30 P.M.

*Chairman*—MARQUE O. NELSON, Tulsa.

*Vice-Chairman*—CHAS. J. WOOD, Tulsa.

*Secretary*—ROBERT H. AKIN, Oklahoma City.

*"Symposium"*—"Lower Urinary Tract."

*"Treatment of Acute Gonorrhea by the General Practitioner"*—J. WORRALL HENRY, Anadarko.

*"Some Facts in the Care and Treatment of Prostatitis"*—T. O. CRAWFORD, Bartlesville.

*"Stricture of the Urethra" (A Case Report, Extravasation of Urine, Complicated by Gangrene)*—STANLEY F. WILDMAN, Oklahoma City.

*"Important Features in Urological Surgery of the Posterior Urethra, Occasionally Overlooked"*—ELIJAH SULLIVAN, Oklahoma City.

#### DISCUSSION

*"Symposium"*—"Upper Urinary Tract."

*"Urological Methods in the Treatment of Nephritis or Hypertension"*—BASIL A. HAYES, Oklahoma City.

*"The Differential Diagnosis of Stones in the Upper Urinary Tract"*—E. HALSELL FITE, Muskogee.

#### DISCUSSION

*"The Venereal Triad"*—FLOYD WARTERFIELD and S. D. NEELY, Muskogee.

#### DISCUSSION

WEDNESDAY, MAY 15TH

*Chairman's Address: "Observations*



*Bearing on the Use of Ultra-violet Rays and Sunlight*—MARQUE O. NELSON, Tulsa.

*"Clinical Aspects and Treatment of Cancer of the Skin"*—RICHARD L. SUTTON, JR., Kansas City, Mo.

*"Contact Dermatitis"*—ROBT. L. HOWARD, Oklahoma City.

(Foot Note: Following scientific section, Dr. Richard L. Sutton will show his moving picture on his "Arctic Bear Hunt.")

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## COMMITTEE REPORTS

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These reports are made in compliance with provisions of the Constitution and By-Laws which call for publication of such matter in the issue of the Journal preceding the Annual Session.

### REPORT OF THE COMMITTEE OF MEDICAL EDUCATION AND HOSPITALS

None of the sciences comprising medicine, no diagnostic procedure nor method of treatment is probably attracting more attention today than is education in general. This is particularly true of the higher and more specialized divisions. Methods, plans, and objectives are being scrutinized and criticized; traditions and precedents are being set aside and more attention is being paid to the needs and capacities of the individual student, plus the apportioned cost of education.

It is quite generally expressed that there are too many physicians and that the number of medical students must be reduced, yet it is obvious that the profession requires each year new recruits who are better trained than the previous ones. In spite of the constant cry for the lowering of educational expense, millions are appropriated for comparatively useless purposes. ~~There must be a constant advance in medical education to keep pace with the constant advance in medical research.~~ Hence society, and the medical profession in particular, is facing a difficult problem.

The correct ratio of physicians to the population is difficult to determine; there is certainly, at present, a great variation as to localities over the world. In the United States, in recent statistics given by Dr. Harold Rypin in the Federation Bulletin of the State Medical Board of the United States, September, 1933, there are 156,440 licensed physicians, or one for every 780 persons. In the state of Oklahoma there is one for every 1000 persons; in Tulsa one for every 560; in Oklahoma City one for every 400 persons. In some of the rural communities the ratio is very low. As to the European countries; in England, Dr. Rypin reports, one doctor for every 1490 persons; in France one for every 1690 persons; and in Sweden one for every 2890 persons. At the present rate of increase the number of physicians in the United States in 1940 will be 171,700, in 1980 about 211,800, as reported by Raymond Walters, President of the University of Cincinnati.

This condition has given rise to considerable study and various opinions have been expressed as to the necessary attitude and procedure for obtaining and maintaining a proper ratio. The committee on the cost of medical care in its bulletin in 1932 states: "There

should be more effective control over the type and number of physicians trained." Dr. Walter Berring, President of the A. M. A., stated in a paper read in 1933: "It is evident that doctors are being trained without any consideration of the possible consumer requirements." Dr. Rapplaye of Columbia University advocates the restriction of the number of students in medical schools rather than a reduction in the number of medical schools. Dr. Hugh Cabot of the Mayo Clinic feels that if a restriction is brought about by the medical schools it should be done not on a vocational basis but on an educational basis. The latter sentiment, together with the probable advisability of reducing the number of medical schools, seemed to be the common attitude expressed at the recent annual meeting of the Council on Medical Education and Hospitals, which meeting it was the privilege of the chairman of this committee to attend. It was also noted during the meeting that much interest was manifested in a discussion of the question of finding additional outlet for physicians.

Attention was called to the number of hospitals over the country that do not have graduate physicians in charge of the x-ray or laboratory departments. In many institutions anesthetics are given by nurses or non-medical individuals; it is obvious that the practice of anesthesiology is the practice of medicine and deals with dangerous drugs. Emphasis was given to the fact that a surgeon is not an expert x-ray man, that radiology is not a simple laboratory procedure as it deals with patients and not with specimens and that the radiologist is entitled to the support of the hospital and should have the same opportunity as any physician and these profits or expect fees should not be appropriated by the hospital.

Reports showed the hospitals in rural communities to be in a deplorable condition as to their pathological and radiological departments.

There are 118 recognized hospitals in the state of Oklahoma; 18 allied institutions that are not registered as such. Of the 118 hospitals, 87 have clinical laboratories; 50, or 24% of which are under the direction of a physician; 35 are under direction of other than a physician; 33 have no clinical or pathological laboratories at all. Of the total number of hospitals 96 have x-ray departments, of which 57, or 49%, are under the direction of a graduate physician; 20 hospitals have no x-ray department. Physiotherapy, which is recognized generally as being an essential department in therapeutics, is found in 32, or 25.7% of the total number of hospitals. There has been no increase in the number of physiotherapy departments in the state since 1927.

In February, 1934, \$24,000 was appropriated by the American Medical Association, following a meeting of the Council on Medical Education and Hospitals of the A. M. A. and the Executive Council of the Association of American Medical Colleges, for the purpose of undertaking a comprehensive study of medical education.

From the studies thus far it is evident that some schools are accepting more students than their circumstances justify; that some are deficient in either physical or clinical facilities which obviously may lead to further reduction in the number of recognized medical schools and hospitals.

Hence it is obvious:

1. That the total cost of medical education will automatically increase.
2. That the cost of education for each medical student will increase in greater proportion.
3. That the educational requirement will be in-

creased as a means of reducing the number of physicians in order to bring about a proper ratio of the number of physicians to the population.

4. That a higher standard of hospitals, particularly in the smaller communities, must be maintained, in order that medical graduates may be encouraged to locate in these communities and further to employ only graduate radiologists, anesthetists, and pathologists in their respective fields.

This is quite difficult in very small hospitals on account of the expense. To that end all physicians in towns and rural communities should endeavor to combine their interests in one hospital in order to furnish adequate support.

A well trained young physician hesitates to locate where he does not have available the facilities to practice medicine as he has been taught; as a result, in several localities those practicing the cults outnumber the medical men from 2-6 to 1, thereby encouraging and fostering the development of osteopathy and chiropractic by deserting the field.

The above statements are facts rather than mere conclusions and unite to form the great problem confronting the medical profession today.

This problem will be solved either automatically, to the great disadvantage of the profession, by political or other lay bodies, or by the profession itself. Since no political or other organization can have a full understanding of medical problems, it is necessary that the profession itself shall be properly informed and such effort as is necessary for the future protection of the medical profession and its members shall be carried out. This is based definitely on the system of medical education followed.

This committee urges a closer relationship between those in the independent practice of medicine, hospital authorities, and those directly occupied in teaching medicine in order that a better understanding may be had of the interdependence of all of these groups.

The committee therefore recommends that the committee on Medical Education and Hospitals of the Oklahoma State Medical Association be given additional powers with a reasonable expense account to make necessary investigations and with delegated authority to meet, if such can be arranged, with similar committees from the faculty of the School of Medicine and from the Oklahoma State Hospital Association, or that a special committee be elected to work under instructions from the Council in order to bring about a better understanding of the problems of medical education, looking toward a proper solution of this vital problem upon which the future of medicine depends. While this is a national question and much work is being done by national organizations, in the last analysis it resolves itself into a local problem.

ARTHUR W. WHITE,  
T. H. MCCARLEY,  
R. M. ANDERSON,

Committee.

#### ANNUAL REPORT of the

Secretary-Treasurer-Editor

April 30, 1934, to April 15, 1935.

To Members of the Oklahoma State Medical Association:

In conformity with the Constitution and By-Laws, I hereby submit the report of various transactions during the past year.

Detailed statements of all activities, financial trans-

actions, duplicate deposit certificates and other business matters have been submitted to the Council for their audit.

**Membership:** On April 30, 1934, we had 1464, and on this date we have 1552.

**Death of Physicians:** This list will appear in the Report of the Committee on Necrology, published in the June Journal.

**Medical Defense:** The following cases have either been settled, dropped or disposed of in the following manner:

#### Settled:

Caddo County No. ....  
Carter County No. 19915.  
Osage County, No. ....

#### Pending:

Caddo County No. 9407.  
Tulsa County, No. 60175.  
Choctaw County, No. 8644.  
Logan County, No. 1693.  
Pontotoc County, No. ....

In addition to the above the following cases are now pending, the progress and status of which is unknown, as they are pending or dormant in the courts:

Blaine County, No. ....  
Carter County, No. ....  
Craig County, No. ....  
Garvin County, No. ....  
Hughes County, No. ....  
Payne County, No. ....  
Pottawatomie County, No. ....

**Journal and Advertising:** It is a pleasure to report that there has been considerable increase in our national advertising during the past year and this is due to the fact that the Cooperative Medical Advertising Bureau of the American Medical Association has found our Journal acceptable to more national advertisers. In the classified card section we have been giving our advertisers a little extra advertising space without cost to the advertiser. We are informed that there has been a better response from the membership in mentioning the Journal when answering advertisements. This is probably the principle feature that is increasing the amount of advertising that we have been able to secure.

The Journal has during the past year maintained its usual size. We have added a cover that has improved the appearance of the Journal. The scientific material has been of a character to compare well with other journals of the same size issued throughout the country. We have had a sufficient quantity of material so that it has not been necessary to ask the membership to make any special effort to contribute articles for publication.

Again I want to thank those who have had charge of the abstract department. Our material has been up-to-date and wonderfully well abstracted. This feature of the Journal is very popular among our readers. Let me insist upon your support to our advertisers so that the income from this source may continue to increase.

#### FIRST NATIONAL BANK

McAlester, Okla., April 16, 1935.

Dr. L. S. Willour, Secretary-Treasurer,  
Oklahoma State Medical Association,  
McAlester, Oklahoma.  
Dear Dr. Willour:

This is to certify that according to our records, the following accounts reflected a credit balance, subject



to check, at the close of business April 15, 1935, as follows:

Oklahoma State Medical Association-	
General Fund.....	\$1,781.07
Medical Defense Fund.....	1,492.32

Yours very truly,

J. K. PEMBERTON,  
Vice-President & Cashier.

#### AUDIT REPORT

Oklahoma State Medical Association  
Dr. L. S. Willour, Secretary-Treasurer  
McAlester, Oklahoma  
For Period May 1, 1934, to April 15, 1935  
By J. K. Pemberton  
McAlester, Oklahoma

April 20, 1935.

Dr. LeRoy Long, President,  
Oklahoma State Medical Association,  
Medical Arts Building,  
Oklahoma City, Oklahoma.

Dear Dr. Long:

Upon request, I have audited the books of account, records and investments of

Dr. L. S. Willour, Secretary-Treasurer,  
Oklahoma State Medical Association,  
McAlester, Oklahoma,

for the period beginning May 1, 1934, and ending April 15, 1935, and submit the following schedules, together with comments and supporting exhibits:

Cash receipts were traced to the bank through detailed check of items received, against deposit tickets as shown in the files of the bank. Cash expenditures and disbursements were checked against the bank records, all vouchers and checks were examined and compared with the original entries; endorsements scrutinized and found to be in order.

In company with Dr. L. S. Willour, Secretary-Treasurer, I have examined the following investments which are kept in a safety deposit box in The First National Bank, McAlester, Oklahoma, which box is in the name of The Oklahoma State Medical Association:

#### General Fund:

Fourth 4¼% Liberty Loan Bonds of 1933-38—	
Bond Nos.	Par Value
E02629575	\$1,000.00
G02629577	1,000.00
C02629573	1,000.00
D02629574	1,000.00
	\$4,000.00

3¼% U. S. Treasury Bonds of 1944-46—	
95099K	1,000.00
94180L	500.00
94181A	500.00
	2,000.00

Total General Fund Investments	\$6,000.00
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#### Medical Defense Fund:

3¼% U. S. Treasury Bonds of 1943-45—	
878J	1,000.00
879K	1,000.00
880L	1,000.00

Total Medical Defense Fund Investments	\$3,000.00
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April 15th, 1935, and subsequent coupons are attached to the entire total of \$9,000.00 bonds.

I find that all coupons clipped from the above bonds during the period covered by this audit have

been properly accounted for in their respective accounts. April 15, 1935, coupons uncollected are as follows:

General Fund	\$117.50
Medical Defense Fund	48.75

The books of the Association are kept on an actual cash receipts and disbursements basis, and for that reason four items accrued, have not been included in the audit. However, three of these items were subsequently paid on April 16, 1935. These accounts are as follows:

West. Union Telegraph Co.	\$ 12.22 (pd. 4-16-35)
Hoffman-Speed Ptg. Co.	488.83 (pd. 4-16-35)
Bowman Stationery Co.	2.53 (pd. 4-16-35)
L. S. Willour, Salary accrued to 4-15-35	100.00

There is attached hereto and made a part hereof, Schedule of Accounts Receivable due the Association, from advertising, which are not included in the balance sheet.

I respectfully submit the foregoing audit and report for your information.

J. K. PEMBERTON,  
Auditor.

The foregoing statement and audit is submitted as my report from May 1, 1934, to April 15, 1935.

L. S. WILLOUR,  
Secretary-Treasurer-Editor.

#### BALANCE SHEET

April 15, 1934

#### Assets

#### Current Assets:

First National Bank, McAlester, Oklahoma.	
General Fund .....	\$1,772.07
Medical Defense Fund .....	1,492.32
	\$ 3,264.39

#### Investments—U. S. Government

#### Bonds:

General Fund (Par Value)	6,000.00	
Defense Fund (Par Value)	3,000.00	9,000.00
		\$12,264.39

#### Liabilities

#### Excess of Assets Over Liabilities:

Balance April 30, 1934.....	\$13,343.93
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#### Deduct:

Excess of Expenditures over Income	
General Fund .....	2,529.75

#### Add:

Excess of Income over Expenditures	
Medical Defense Fund.....	1,450.21
	12,264.39
	\$12,264.39

#### CASH RECEIPTS AND DISBURSEMENTS

May 1, 1934 to April 15, 1935

#### General Fund:

Balance .....	\$ 1,801.82
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## Receipts:

Advertising .....	\$4,978.60
Memberships .....	4,624.00
Transfer from Medical Defense Fund .....	1,500.00
4th 4¼% Liberty Bond Redeemed (Called) .....	1,000.00
4th 4¼% Liberty Bond Sold .....	1,000.00
Premium Received on Liberty Bond Sold .....	15.00
Interest Received on Gov't Bonds .....	159.50
Notes Payable (Bor'w'd Money) .....	2,000.00

Total Receipts .....\$15,277.10

Total Cash to Account for.....\$17,078.92

## Disbursements:

Dr. L. S. Willour, Salary to March 31, 1935, at \$200.00 per Month .....	\$2,400.00
Oltha Shelton, Salary to April 15, 1935, at \$125.00 per Month .....	1,562.50
Extra Office Salaries .....	25.00
Expense Annual Meeting .....	564.00
Council and Delegate Expense .....	500.01
Legislative Expense .....	910.24
Post-Graduate Expense .....	32.90
Cancer Study Expense .....	24.00
Refunds—Memberships .....	12.00
Printing Journal .....	5,408.02
Postage .....	177.46
Printing, Stationery and Office Supplies .....	147.22
Office Rent .....	232.50
Telephone and Telegraph .....	76.35
Press Clipping Bureau Service .....	36.00
Treasurer's Bond and Audit .....	75.00
U. S. Check Tax .....	2.40
Legal Expense .....	12.50
Miscellaneous Expense .....	40.03
Notes Payable—Paid .....	2,000.00
Interest on Borrowed Money .....	45.00
Purchase ¾% U. S. Treasury Bond .....	\$1,000.00
Premium on ¾% U. S. Treasury Bond .....	23.72
	1,023.72

Total Disbursements .....\$15,306.85

Balance on Hand April 15, 1935.....\$ 1,772.07

## Medical Defense Fund:

Balance April 30, 1934 .....\$ 1,542.11

## Receipts:

Fees Collected .....	\$1,574.00
Interest Rec'd—Gov't Bonds .....	63.75
	1,637.75

Total Cash to Account for.....\$ 3,179.86

## Disbursements:

Transfer to General Fund .....	\$1,500.00
Medical Defense—Members .....	187.50
U. S. Check Tax .....	.04

Total Disbursements .....\$ 1,687.54

Balance April 15, 1935.....\$ 1,492.32

## CASH ON DEPOSIT

April 15, 1935

FIRST NATIONAL BANK  
McAlester, Oklahoma

## General Fund:

Balance as per records .....	\$ 1,772.07
Add: Outstanding Checks	Number Amount
	3517 4.00
	3574 1.00
	4115 4.00
	9.00

Bal. as per Bk. Stat. and Verification Letter \$ 1,781.07

## Medical Defense Fund:

Balance as per Records .....	\$ 1,492.32
Add: Outstanding Checks .....	None

Bal. as per Bk. Stat. and Verification Letter \$ 1,492.32

## INCOME AND EXPENDITURES

May 1, 1934 to April 15, 1935

## General Fund:

## Income:

Advertising .....	\$4,978.60
Memberships .....	4,624.00
Premium Received 4th 4¼% Liberty Bond Sold .....	15.00
Interest Received—U. S. Gov't Bonds .....	159.00

Total Income .....\$ 9,777.10

## Expenditures:

Salary Secretary .....	2,400.00
Salary Assistant Secretary .....	1,562.50
Other Office Salaries .....	25.00
Expense Annual Meeting .....	564.00
Council and Delegate Expense .....	500.01
Legislative Expense .....	910.24
Post-Graduate Expense .....	32.90
Cancer Study Expense .....	24.00
Refunds—Memberships .....	12.00
Printing Journal .....	5,408.02
Postage .....	177.46
Printing, Stationery and Office Supplies .....	147.22
Office Rent .....	232.50
Telephone and Telegraph .....	76.35
Press Clipping Bureau Service .....	36.00
Treasurer's Bond and Audit .....	75.00
U. S. Check Tax .....	2.40
Legal Expense .....	12.50
Interest on Borrowed Money .....	45.00
Premium Paid on ¾% U. S. Treasury Bond Purchased .....	23.72
Miscellaneous .....	40.03

Total Expenditures .....\$12,306.85

Excess of Expenditures Over Income..... 2,529.75

## Medical Defense Fund:

## Income:

Fees .....	\$1,574.00
Interest Rec'd—U. S. Gov't B'ds .....	63.75

Total Income .....\$ 1,637.75

## Expenditures:

Medical Defense Cases—Settlements .....	187.50
U. S. Check Tax .....	.04

Total Expenditures .....\$ 187.54

Excess of Income Over Expenditures.....\$ 1,450.21



# ABSTRACTS «» REVIEWS «» COMMENTS AND CORRESPONDENCE

## EYE, EAR, NOSE and THROAT

Edited by Marvin D. Henley, M.D.  
911 Medical Arts Bldg., Tulsa

Congenital Coloboma of the Macula. Arnold Sorsby, London. *The British Journal of Ophthalmology*, February, 1935.

Infinite care in the correlation of the facts from about one hundred fifty-six different sources makes this manuscript outstanding. Skeletal defects are demonstrated by numerous x-ray pictures of the hands and feet of the cases reported. Fundus pictures, plain and in color, demonstrate and emphasize the points of greatest interest. Compilation of the historical data was rendered doubly difficult by the incompleteness of former cases recorded in the literature dating from 1866 up to the present time. Any ophthalmologist interested in this particular disease will find this publication is of incalculable value because of its completeness in all essential details. One part deals entirely with a single family of eight children and the father and mother. Each case is worked up carefully in great detail including the laboratory procedure which might have a bearing on the disease. To attempt a recapitulation of the publication would be imprudent. The summary of Sorsby is as follows:

1. The literature on congenital macular coloboma is reviewed, and from the sifted material, 20 cases of bilateral macular coloboma, 36 unilateral and three (possibly five) familial groups, are considered. There is nothing in the ophthalmoscopic appearances of the lesion which stamps any particular defect as definitely congenital, as opposed to lesions of post-natal origin.

2. Attention is drawn to cases in which macular coloboma was present in the same eye together with a typical choroidal coloboma, as also to cases in which macular coloboma was associated with other atypical colomatous defects.

3. One suggestion that emerges is that non-pigmented colobomata tend to be deeply excavated whilst excavation in pigmented colobomata is relatively less marked.

4. It would appear that in addition to the recognized varieties of non-pigmented and pigmented macular coloboma, a third type, aptly described as a wheel-figure, has a fairly characteristic appearance. In this type the center is white and from it pigmented spokes radiate towards a pigmented rim.

5. Studies in the pathological anatomy of macular coloboma, though none of them conclusive, would appear to indicate that there is no basis for the belief that congenital macular colobomata are the result of intra-uterine inflammation.

6. A description is given of a familial group consisting of a mother and five children, all of whom showed bilateral pigmented macular coloboma. Associated with this defect was a rare skeletal abnormality known as apical dystrophy of hands and feet. In one of the patients, the condition of solitary kidney was present.

7. Attention is drawn to the studies of Landauer on the creeper fowl, a breed characterized by skeletal defects and ocular abnormalities. Consideration is also given to the work by Bagg and Little and their collaborators on the experimental production of hereditary defects in mice, the defects involving the eye, feet and kidney.

8. Arguments are advanced in favor of regarding macular coloboma as a localized choroideremia.

Metastatic Hypernephroma of the Tonsil. Menger and Arons. *The Laryngoscope*, September, 1934.

An uncommon occurrence is here reported. A male, age 63, after a months hospitalization following a suprapubic prostatectomy, was discharged from the hospital. About one and a half years later he was readmitted and a left nephrectomy was done. The pathological diagnosis was hypernephroma. Accompanying this report was an admonition for a follow-up on the case bearing in mind a possible metastasis to the lung. He was in the hospital for two weeks at this time. About two years later he reported to the authors with a chief complaint of a recurring sore throat which had been giving him trouble since he had had two teeth extracted under local anaesthesia, three weeks previously.

Examination of the throat revealed what appeared to be a Vincent's angina of the right tonsil. A smear showed a very large number of the specific organisms. The Wassermann was negative. The patient was accordingly treated for Vincent's angina. Two weeks later there was a mass on the cryptic surface of the tonsil about as large as the tonsil itself. The pathologists' report was: "Section is lined by stratified epithelium which is in part ulcerated by pressure of a growth underneath. The tumor is made up of irregular sheets of foamy cells with vacuolated cytoplasm and small, pale staining nuclei. Separating the cell groups are thin fibrous septa with very thin walled blood vessels. There is considerable hemorrhage throughout. Diagnosis: Hypernephroma, metastatic to the pharynx."

Coutard's treatment was inaugurated. The result was a complete disappearance of the metastatic right tonsil extending to the uvula. The authors state: "The reaction in irradiating the oral cavity is noted by a pseudodiphtheroid membrane which develops on the mucosa and the presence of a dermatitis which disappears in two or three weeks. The less severe earlier reactions are dryness of the mucous membrane of the mouth and pharynx, a disturbance or complete loss of taste, and dysphagia. These local complications are reduced and later complications are practically avoided by accurate technique, carefully measured and divided dosage."

They continue: "Records of a four-year period show that 28 per cent of the cases of carcinoma of the larynx, formerly considered incurable, have been cured by the Coutard method. In cases treated only by surgery, a cure of 6.6 per cent was obtained. Twenty-six per cent of the cases of carcinoma of the tonsil were cured by Coutard irradiation. Similar re-

sults were obtained in inoperable cases of carcinoma of the oral cavity, pharynx and larynx."

**Precancerous Epitheliomatosis (Bowen's Disease) of the Palate and Fauces.** Walter Howarth, London. *The Journal of Laryngology and Otology*, January, 1935.

Dermatosis with chronic atypical epithelial proliferation was first described by Bowen of Boston in 1912. He says that it is an affection of long standing, characterized clinically by the formation of single or multiple papulosquamous, eroded or crusty, hyperkeratotic tumor-like lesions. The age incidence is usually after forty-five years and a decade or two may pass before the lesion causes enough disturbance to have the patient consult a physician.

The first recorded case of occurrence on mucous membrane was on the vulva and was reported by M. Hudelo. The microscopical anatomy is summarized as follows: dyskeratosis in a hypertrophic epithelium; preponderance of intracellular edema over intercellular edema, resulting in the formation of a vacuole about the nucleus; numerous mitotic figures; clumping of large cells with giant nuclei and large nucleoli; retention of filaments of union and squamous cells to produce hyperkeratosis and parakeratosis; general confused appearance of the malpighian layer.

The author has searched the literature but has not found a recorded case of this disease in the mouth. He reports three cases occurring on the mucous membrane of the mouth, palate and fauces.

Case No. 1 was a male, age 56. When first seen in 1920 the whole left side of the cheek, soft palate, lips and floor of the mouth were covered with the lesion. The glands were not involved and the pathological report denied malignancy. The Wassermann was negative. This was treated with diathermic cauterization which controlled it temporarily. The latest reappearance was only a few months ago on the upper lip.

Case No. 2 was a male, age 55. For the past two years the condition of the patient's fauces had been noticed by his family physician but since it was causing no discomfort, nothing was done about it. When the condition became painful he consulted several throat specialists but the total of their advice was that the condition was not malignant, following a biopsy. When the patient came under the care of the author the lesion was treated with diathermic cauterization. The lesion cleared completely.

Case No. 3 was a male, age 58. The patient had seen the author six months previously for a growth in his throat. He was instructed to return for treatment but failed to show up at the appointed time. When he did appear the lesion had spread and looked decidedly malignant. Microscopic examination showed pathology similar to the other two cases. There was a glandular enlargement present. His teeth were in such a septic condition that he was sent to a dental surgeon for treatment. Diathermic cauterization was started and at the present the lesion is clearing up nicely.

This article closes with a discussion of the effect and possibilities of filterable viruses in these cases.

**Cancer of the Larynx.** Gabriel Tucker, M.D., Philadelphia. *Archives of Otolaryngology*, January, 1935.

Taking into consideration the fact that these two hundred cases of cancer of the larynx, seen at the bronchoscopic clinics of the University of Pennsylvania, were in many instances far advanced and that several physicians and roentgenologists attended, this

article is representative of the methods of treatment and results of more than one physician and clinic.

In each case the usual careful routine examination was given, including a biopsy of the lesion when necessary, with no ill effects resulting.

Of the two hundred cases, one hundred ninety-six were white patients and only four were negroes. One hundred eighty-three were males. The smallest per cent occurred between the ages of twenty and thirty, increasing each decade, with the largest per cent occurring after the age of sixty years.

Forty-one per cent of the cases were attributed to vocal abuse, 25 per cent to the excessive use of tobacco and the result of a possible over-exposure to the roentgen rays, was doubtful.

Cancer developed in two cases where papillomas had recurred, also in two cases where keratosis and leukoplakia had been present and in one case granuloma formation preceded the appearance of squamous cell carcinoma.

Complicating and concurrent pathologic conditions of twenty cases are described as: cancer of the larynx with tuberculosis of the larynx and lungs; cancer of the larynx with tuberculosis of the lungs; cancer of the larynx with evidence of syphilitic infection; cancer of the larynx, pulmonary tuberculosis, constitutional syphilis and diabetes; cancer of the larynx and cancer of the esophagus, and cancer of the larynx, pulsion diverticulum of the esophagus and constitutional syphilis.

Hoarseness and local discomfort occurred in all cases, dyspnoea in 41 cases and dysphagia in 58 cases; pain was noted both local and referred only in the more advanced cases.

Fifty-nine and five-tenths per cent of the series were considered intrinsic in origin, with 28 per cent extrinsic and 12.5 per cent considered mixed cases. The latter would probably be classed as intrinsic, due to the overlapping of the extension of the lesion.

The proper surgical procedure was determined by the extent and location of the lesion. One hundred twelve cases were considered suitable for surgery. Only six patients refused operation.

In 58 cases laryngofissure was performed, with no mortality due to the operation; total laryngectomy was done in 31 cases with 3 post-operative deaths and in 17 cases partial laryngectomy was done with no deaths due to the operation. In every case irradiation was performed if there was a recurrence following surgery. Irradiation was given in 3 cases of extrinsic cancer where surgical treatment had not been done and 3 cases were reported cured, one for over three years.

The plea is made for early diagnosis and for further education of the public, to aid in lessening the dread disease of cancer of the larynx.

### INTERNAL MEDICINE

Edited by L. J. Moorman, M.D., 1200 N. Walker, Oklahoma City; C. E. Bradley, M.D., Medical Arts Building, Tulsa; Hugh Jeter, M.D., 1200 N. Walker, Oklahoma City

By HUGH JETER, M.D.

**Sedimentation Time As An Aid in Differentiating Acute Appendicitis and Acute Salpingitis.** C. T. Smith, A.B., M.D., F.A.C.P., Thelma Harper, A.B., and Anna Watson, A.B., Rocky Mount, N. C. Amer-



ican Journal of the Medical Sciences, Vol. 189, No. 3, March, 1935.

The authors have studied 19 cases of acute salpingitis and 38 cases of acute appendicitis and think that there is a suggestion that the sedimentation time may be of some value in differentiating these two conditions.

They believe the sedimentation time is likely to be prolonged during the first 48 hours after the onset in appendicitis and after the 48 hours a tendency for the time to be shortened. On the other hand, the time is not so prolonged, even in the 24-hour period immediately following the onset.

Various theories for the explanation are suggested. Different organisms causing the infection, and differences in the nervous mechanism are thought to be factors.

**The Red Blood Cell of Man.** Russell L. Haden, M.D., Head of Section on Medicine, Cleveland Clinic, Cleveland, Ohio, *International Clinics*, Vol. 1, March, 1935, Page 68.

The author gives a splendid review of the historical development of the present knowledge of the red cells, going back as far as Leeuwenhoek, who in 1673 first observed minute objects in his own blood. The probable reasons for the existence of the red cells. Theories, such as suggested by Hartridge, explaining why the cell is biconcave, are given. The origin of the cell and life history is shown and illustrated by a table. Certain variations in the size and shape as well as thickness, exist, namely: the sickle cell trait in negroes; the cells of congenital hemolytic jaundice approach the spherical form; an hereditary oval cell anemia has been described, and it seems possible that there is an inherited abnormality of the stroma of the red cell in the erythroblastic anemia. "These conditions may be compared to albinism or alkaptonuria in that they represent inborn errors of development."

The following interesting data are given in simple table form:

1. Life history of the erythrocyte.
2. Measurements of the red cell of clinical value.
3. Normal measurements of red cells.
4. Clinical classification of anemia.
5. Criteria for determining specific changes or deficiencies in the red cells.
6. Blood findings in anemia due to acute hemorrhage.
7. Blood findings in anemia due to excessive hemolysis.
8. Blood findings in anemia due to depression of bone marrow function.
9. Blood findings in anemia due to deficiency of specific substances. This pertains to iron and liver deficiencies.

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
LeRoy Long Clinic  
714 Medical Arts Bldg., Oklahoma City.

**Grave Familial Icterus of the New-Born (Erythroblastosis) Cured by Hemotherapy** (Sur un Ictère Grave Familial du Nouveau-né Erythroblastose) Guéri par Hemotherapie). By M. Pehu and A.

Brochier, Lyons, *La Presse Medicale*, December 12, 1934.

This is a synopsis of a report made at a meeting of the Paris Academy of Medicine December 4, 1934, prepared by Lucien Rouques:

The type of icterus is that described by Pfannenstiel. An analysis of the antecedents may suggest it. When it is suspected there should be a complete microscopic examination of the blood in order to determine whether there is an erythroblastosis.

The treatment is intramuscular or, better, intravenous injection of blood, the average amount approximating one one-hundredth the weight of the infant. Three or four injections, about two days apart, are usually necessary.

In the course of treatment it is indispensable to be "au courant" with the condition of the blood, the general state of the patient, and the intensity of the icterus.

In the case of the patient reported, recovery followed the employment of citrated blood. The authors make the interesting statement that it was the first observation in France of cure of grave familial icterus of the new-born by the injection of blood, but that a number of cures by the method have been reported from other countries. ("De nombreux cas de guérison par cette methode ont ete signales a l'etranger").

—LeRoy Long.

**Erythema Nodosum and Nephritis Following Section of Bands in a Tuberculous Patient.** "Erytheme Noux et Nephrite Apres Section de Brides Chez une Tuberculeuse". By F. Coste and J. Bernard. *La Presse Medicale*, December 12, 1934.

I am indebted to P. L. Marie for a synopsis of statements made by the reporters at a meeting of the Societe Medicale des Hopitaux on December 7, 1934.

Recalling that erythema nodosum secondary to a frank tuberculosis is rare, and that it had not been observed after the section of bands, a case is reported where, nine days after the operation, there was a brutal elevation of temperature with enanthematous angina followed the next day by a typical erythema nodosum. A week later there was an acute fluxionary nephritis ("une nephrite aigue fluxionnaire"), with a gross but transitory azotemia. The evolution was marked by grave general symptoms. There was finally a pulmonary perforation complicated immediately by a purulent effusion swarming with streptococci.

Attention is directed to the brutal expression from stump, due to the section of bands, and the massive dispersion of tuberculous antigens in the organism, which is a logical consequence.

The question of allergy is discussed, especially with reference to the sudden appearance of symptoms due to the presence of a streptococcal infection. ("role déclanchant de l'infection streptococcique").

Finally, coexisting or joined allergies ought to receive attention, whether tuberculo-streptococcal or other kinds. The work of Bordet concerning non-specific allergy, and those of all other authors who have studied the Schwartzmann-Sanarelli phenomena are cited as being very suggestive.

—LeRoy Long.

**A New Therapy Against Infection: Charcoal Intravenously (Une Nouvelle Therapeutique Anti-Infectieuse: Le Carbone Intraveineux).** By A. Touraine

and B. Menetrel l'Hopital Saint-Louis, Paris, La-  
Presse Medicale, December 12, 1934.

In the February 1934 number of L'Union Medicale du Canada there was an article by Eugene Saint-Jacques, Montreal, on "The Treatment of Various Infections by the Intravenous Injection of Animal Charcoal" (Sur le Traitement des Infections Variees par les Injections Intraveineuse de Carbone Animal). An abstract of the article was published in this section of the Journal for April, 1934.

Soon after that I had an opportunity to discuss the matter with a confrere who is a member of the organization to which the report had been made. He treated the claim of Saint-Jacques rather lightly and with some show of Gallic sarcasm. Speaking of the report, he said: "Nous lui avons dit des choses." (We told him things.)

Now here is another article about the same subject. The authors were apparently stimulated to do some experimental investigation by a report of the work of Saint-Jacques to the Paris Academy of Medicine by Prof. Sergent January 30, 1934. (See Bulletin de l'Academie de Medicine de Paris, Vol. CXI, No. 4.)

Incidentally, it is interesting to note that Saint-Jacques uses the word "carbone," and that in this article the words "carbone" and "charbon" are used interchangeably when speaking of charcoal. While "charbon" is the word most commonly employed, it appears that "carbone" is permissible.

Touraine and Menetrel employed a suspension of "carbone animal" (animal charcoal) as advised by Saint-Jacques, and in the main agree with him that the intravenous use of a sterile 2% suspension of it, pulverized to the greatest possible extent, is useful in many infectious processes, and that it is practically harmless when as much as 3 cc. or 4 cc. is given intravenously. I say "practically harmless" because these authors have observed shock with chills in one or two patients. They report, too, very encouraging results, but along with them some partial and complete failures.

After some experimental work, the authors undertook the development of an "activated" preparation of charcoal for intravenous medication. They found that among the "activated" charcoals of vegetable origin there was one which was not an extract of wood. (Parmi les charbons actives d'origine vegetale il en exist un qui n'est pas extrait de bois"). They say that it has powers of absorption and adsorption; that it is charged electrically, and that it has even a gamma radiation that can be photographed, but its definite origin is not indicated. In its preparation it is calcined at a "very high" temperature in contact with metallic vapors, minutely neutralized (minutieusement neutralizee), ground, pulverized, sifted so that the fundamental grain ("grain fondamental") does not surpass 2 or 3 microns. For use, a suspension of 2% in physiological serum is made.

The authors believe that the activated vegetable charcoal devised by them is more effective and even less harmful than animal charcoal—this notwithstanding the warning of Saint-Jacques in his original report that it must be animal charcoal and NOT vegetable charcoal.

There are only hypotheses about the rationale of action. In vitro, charcoal suspensions have no bactericidal powers at all. It is suggested that the charcoal fixes and neutralizes the toxins. The authors believe that in the organism there are phenomena analogous to those observed in connection with charcoal

filters for the sterilization of water, and in the manufacture of gas masks. ("Il se passerait dans l'organisme des phenomenes analogues a ceux que l'on a observes en utilisant les filtres au charbon active pour la sterilisation des eaux et la fabrication des masques a gaz asphyxiants"). Then, again, it is believed that the presence of the charcoal in the blood rapidly augments the polynuclear cells which act as phagocytes. And, yet again, that the bacteria may adhere to the charcoal particles, both the particles and the adherent bacteria being subjected to phagocytosis.

The authors believe that the treatment of various infections by intravenous injection of charcoal is easy, harmless, even in children. They regard it as an interesting method that ought to be tried on a grand scale. ("En resume, le traitement par le carbone intraveineux est d'un emploi facile, d'une innocuite absolue, meme chez l'enfant. C'est la une methode qui parait interessante, et qui doit etre essayee sur une grande echelle.")

—LeRoy Long.

Intractable Dysmenorrhea. By Frederick S. Wetherell.  
American Journal of Obstetrics and Gynecology,  
March, 1935, page 334.

This author is reporting three cases of intractable dysmenorrhea treated by resection of the superior hypogastric plexus (sympathetic neurectomy). All three cases obtained relief. The author reports no difference in libido nor any interference with subsequent pregnancy or delivery.

The following are the conclusions drawn by the author:

"The operation of resection of the superior hypogastric plexus of sympathetic nerves for the relief of dysmenorrhea, rightly belongs in the domain of the gynecologist; one who is able to analyze the individual case and to determine whether everything has been done in a medical way for the relief of the dysmenorrhea. Furthermore, it is necessary that he be able to judge the necessity for removal of gross pathologic conditions if found present. It is not merely a question of whether the surgeon is able to resect the plexus, but whether the individual case has been studied and that nothing remains to afford relief except surgery. In the light of previous radical treatment, such as radiation, hysterectomy, or the use of opiates, the operation here discussed is a conservative one, but the ever present possibility of a mortality must be kept in mind and the operation advised only in those cases in which there is definite evidence that no treatment other than the previously mentioned radical procedure, is of avail. Furthermore, the operator's experience should be such, that in cases of secondary dysmenorrhea requiring other surgery, the operation will be performed with such rapidity as will allow enough time for the added nerve resection without jeopardizing the patient's chances."

Comment: Resection of the superior hypogastric plexus has a distinct field of usefulness in the treatment of intractable dysmenorrhea. However, considering the prevalence of this condition and the subjective character of the symptomatology, it is strongly felt that the risk of operation should contraindicate its employment except in those cases in which there is definite evidence that no treatment short of radiation, hysterectomy or the use of opiates can be successful.

—Wendell Long.



## ABSTRACT

Flinn, Frederick B.—Some Clinical Observations on the Influence of Certain Hygroscopic Agents in Cigarettes, Laryngoscope, 1935, XLV No. 2, 149-154.—Mullinos & Osborne (Proc. Soc. Exper. Biol. and Med. 32: 241-245, 1934) using rabbits showed the edema caused by cigarettes using diethylene glycol as hygroscopic agent to be less than that from cigarettes using glycerine. Flinn reports a number of clinical observations. In cases showing congestion of some portion of the mucous membrane of upper respiratory tract as result of smoking glycerine treated cigarettes, on smoking cigarettes containing diethylene glycol, con-

gestion disappeared in 62.3 per cent and considerable improvement noted in other 37.7 per cent. On returning to glycerine treated cigarettes 80 per cent showed a return to the congested condition of the pharynx and larynx. Coughs and irritation of the tongue showed analogous results.

"Summary: The combustion products of glycerine when it is used as a hygroscopic agent in cigarettes will under certain conditions cause an irritation of the throat. The combustion products of diethylene glycol cause only a slight irritation, if any, of the throat. There is some evidence that they may be beneficial where irritation is present."

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# THE JOURNAL

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## THE INTEGRITY OF THE MEDICAL PROFESSION— HOW CAN IT BE PRESERVED \*

*Mr. Chairman, Ladies and Gentlemen:*

At this last meeting of the year, I wish to talk to you a few minutes about the importance of preserving the integrity of the medical profession.

Integrity means completeness. It means perfection. That being true, it is too much to expect that such a state will be realized in this world. At the same time, it would be difficult to find a sound philosopher who would say that it is not a good thing to look forward to it as an ideal.

In order to approach the subject in a more or less methodical way, I will lay down this proposition: The usefulness of the medical profession is in direct ratio to the integrity of the profession.

If the usefulness of the profession bears direct relation to its integrity, then we ought to do what we can to preserve the integrity of the profession.

How can the integrity of our profession be preserved? There are many things to take into consideration, but I wish now to mention only a few of them.

The first essential in preserving the integrity of our profession is to be prepared in an ethical and technical way. I am not speaking now of any narrow code of ethics, but I am using the term in its broadest sense, and in that sense it comprehends moral and professional, legal and social responsibilities. A good doctor cannot be made out of an individual who is morally crooked any more than a good doctor can be made out of an individual who is crooked in connection with professional ethics. A good doctor cannot be made out of an individual who does not obey the laws of his country, nor can the right kind of a doctor be made out of an individual who

does not have some sort of proper conception of his relation to human society. He must have these qualifications, and after them he must prepare himself in a technical way so that he is able to render the service required of him as a member of his profession.

The medical profession, both as individuals and as groups of individuals, can do much in preserving the integrity of the profession by being independent of cheap and destructive sophistries. The right kind of doctor will be independent because he will have acquired information enough to make it possible for him to be wisely discriminating when it is necessary. He will be so independent that he will not have dealings and associations with cults and sophists, because he has been taught to think and to reason. He will understand, too, that when he lowers himself to the level of the irregulars he is doing just so much to tear down and destroy the integrity of his profession.

The well informed and conscientious doctor of medicine has a good reason for being independent because he belongs to a profession that is not circumscribed in any way. He belongs to a profession which permits him to use any agent or any means that has been proven to be of service in his work.

I wonder if we understand the situation as it ought to be understood. I wonder if the irregulars are not producing much mischief in the world because they are supported to a certain extent by members of our profession. I wonder if all the members of our association understand what an unfortunate and even cruel thing it is to give strength and comfort to those who are not in sympathy with us, and, more than that, to those actually doing what they can to retard the progress of medicine. What do I mean when I use the terms

\*An address by Dr. LeRoy Long, retiring President, at the Annual Meeting Oklahoma State Medical Association, Oklahoma City, May 14, 1935.



strength and comfort in connection with dealing with the irregulars? I mean that when a member of the regular profession so far forgets himself that he is willing to have a consultation with a member of one of the cults he is giving strength and comfort to that cult, and is doing a great deal to bring criticism and even disgrace to the profession he represents.

The doctor of medicine may do much to preserve the integrity of his profession by taking a personal and humane interest in his patients. In order to be a doctor as ideal as possible, it is not enough to have technical information. While technical information is of extreme importance, it can be made of much more value if the one who employs it has some sort of adequate spiritual insight into the necessities of individuals who are under his care. In my judgment, this is a matter of great importance, not only in connection with the preservation of the integrity of the profession, but in connection with the development of the individual himself in the practice of his profession. I am not speaking now of the fawning individual who covers up his ignorance by much meaningless conversation, but I am speaking of the conscientious man or woman who, having serious responsibilities, recognizes those responsibilities in a way that is understandable by the patient.

The doctor of medicine ought to remember his duty to the poor. He ought to remember that it is one of the proud traditions of his profession that the poor and needy are not neglected in times of misfortune and dire necessity. He ought to do what he can to encourage municipal and other governmental agencies to provide for the care of the indigent sick. In his work he has an opportunity to know about conditions where the old and feeble and helpless; where deserted mothers with little children mutely suffer and often die because their fellow men do not take an adequate interest in their welfare. The burden of encouraging relief for these unfortunates has always rested upon the medical profession and the allied professions, and it always will. I am not advocating any plan that would place the burden solely upon the medical profession, but I am calling attention to a situation in which we can render great service by proper advice, proper influence and proper leadership touching the care, by the constituted authorities, of unfortunate,

penniless and helpless human beings when they are sick.

My friends, these are a few of the problems which I have pondered during my tenure as President of the State Association. I now hand over any necessary and proper recognition of them to my successor.

—o—

#### TISSUE HEATING BY SHORT WAVE DIATHERMY: SOME BIOLOGIC OBSERVATIONS

Bernard Mortimer and Stafford L. Osborne, Chicago (Journal A. M. A., April 20, 1935), performed experiments on twelve anesthetized dogs and on the thigh of eight human subjects to study and measure the heating effects of short wave diathermy and to observe any other changes that might occur. Five short wave machines were used, a 6 meter, 15 meter, 16 meter, 25 meter and the conventional spark-gap diathermy. There is no conclusive evidence from the literature nor were they able to substantiate the claim of specific biologic action of high frequency currents (short wave diathermy). In their opinion the burden of proof still lies on those who claim any biologic action of these currents other than heat production. The experimental work that claims specific bactericidal action for these high frequency currents may be more rationally explained, they believe, on the basis of "point heating," which raises the temperature of the micro-organisms above their thermal death point without a corresponding elevation in the temperature of the medium. It still remains to be demonstrated whether such test tube results can be secured with infection in the body. Their own work on the machines shows that there is a thermal gradient from the hot skin to the less hot tissues within. There is no evidence from reliable experimental work on living subjects that short wave diathermy possesses a more uniform penetration of heat into the body than the conventional diathermy. The possibility of special selective thermal action is a very remote one. They do not believe that it is possible to predict the response of the body to high frequency currents from phantom model or other in vitro experiments.

—o—

#### PRIMARY ENDOMETRIOSIS OF THE URINARY BLADDER

Erle Henriksen, Baltimore (Journal A. M. A., April 20, 1935), summarizes the more important theories of the genesis of endometriosis, as well as its mode of dissemination. He feels that the term "primary vesical endometriosis" should be limited to those cases in which no demonstrable contiguity with the uterus, fallopian tubes or ovaries is present and in which there has been no surgical trauma of the bladder wall or its peritoneal reflection. In conformity with this criterion he presents a case, with illustrations, for no continuity could be demonstrated between the uterus and the bladder and, although there had been a previous pelvic operation, the bladder peritoneum had not been traumatized. The lesion usually presents a symptom complex recognized by its cyclic relation to the menstrual period and consisting of increased frequency of urination, dysuria and hamaturia. The mode of treatment is dependent on the age of the patient, the size and location of the tumor, and the general condition of the patient. Since there are cases presenting an atypical picture, this tumor may easily be mistaken for malignant lesions of the urinary bladder.

## YOUR BROTHER AND YOU

LOUIS H. RITZHAUPT, B.A., M.D.  
GUTHRIE

President's Address  
Oklahoma State Medical Association

*Mr. President, Ladies and Gentlemen:*

I want to speak to you of our duties as my heart dictates to me; I want to speak to you of the most sacred things which we know—ourselves, our profession, our community, and our government.

Listen to me with love and patience, even as I shall speak to you with love and kindness. The duties which I am going to point out to you I strive, and shall strive as long as I live, to fulfill, to the utmost of my power. If I will not deceive myself, surely I will not deceive you.

Hear me, therefore, as a brother; judge freely among yourselves whether my teachings are right or wrong. Feel free to criticize, however; when we present ourselves to the world, let us be united.

Every individual's life is circumscribed and we live in a limited world. All the world that we should attempt to conquer is our own, and until we are rulers of our own kingdom let us not try to rule others. Aristotle has said that the foes of an army are those within its own camp, which means all you can think into it. This saying of the sage is all too true.

We are gathered here to mingle one with another, so that, like the flowers, the tendrils of our hearts may draw from each other those delicate perfumes of inspiration and those rich harmonies of color that alone can give beauty and proportion to our thoughts and acts; we are here to enjoy a professional companionship that will aid us to analyze our successes and failures, so that we may pluck from our hearts that deep-rooted unbelief and that miring uncleanness of thought that causes us to doubt our fellow men. To do this, let us consider the doctor himself, the doctor's profession, the doctor's community, the doctor's state. Let us dwell awhile with each of these.

The doctor himself, who has lurking in his own heart his worst enemies, a legion of which could be numbered. Principally we find hate, jealousy, fear, greed, sloth,

inertia and love of self. Far be it from me to work out a quantitative or qualitative analysis of how each of these attack your soul. I do well to know that each has a place in me. I have found that the first item in the creed of perfection is obedience to the inner man that warns against the destructive thoughts and actions. Revolt against such obedience destroys our personality and we are doomed to disappoint ourselves and those with whom we come in contact. Such revolt brings sorrow, heartache and grief; only when they cut down to the very soul, is chastening and purifying sanctity, grace and dignity revealed. In this wound should be implanted the seeds of loyalty to ourselves and right feeling toward others. What one man has attained, other men may attain. Misunderstanding, villification and criticism come to those who try. This is part of the penalty of success and greatness, but he that has attained greatness understands that criticism in itself is no proof of greatness. Greatness lies in being able to endure scorn without resentment.

Ethics is the science that treats of the principles of human morality and duty, the science of human conduct, one with another. Ethical reflection, if at all adequate, must issue in a philosophy of life, in a view of our relations to our profession, to society and to the world at large. Ethical conduct is limited to the purposive, or willed acts of normal and intelligent human beings. In some cases the act itself may not be unethical in its beginning, but the end toward which it is directed, and the end which it reaches is the basis of our decision. Warm with the emotions and interests of life, we must be our own judge of our own ethical standing.

Pericles, who built the city of Athens, Socrates, the greatest mind the world has ever known, Hippocrates, Aristotle, Columbus, Martin Luther, Michael Angelo, and during the centuries thousands on thousands of the best, the greatest and the brightest men who lived were execut-



ed, reviled, disgraced and imprisoned. Success lies in cooperation and reciprocity; the hope of the future is ahead, not behind. The degree of our success is measured through our relation one with another, each man doing the thing he can best perform, the thing whereby he renders the greatest service.

It is time for faith and courage,  
It is time to plan and build,  
It is time to unite,  
It is time for brotherhood.

It is here we meet the doctor in his professional relationship—I choose to call it professional brotherhood. The brotherhood of consecration to an art or profession admits all who are worthy; and all who are excluded, exclude themselves. If your life is to be a genuine consecration, you cannot be tied by greed and prejudice; you must be free! Only the free man is truthful.

Here we find ourselves leaving the individual doctor and grouping him with others of like profession. One art never flourished alone, neither does one individual. Diversities, failures, education, and intelligence seem to give courage, hope, animation, and bind people together into a common bond. Success of the whole depends on the service rendered by each integral part. What happens to one of us sooner or later happens to all; we have always been involved in a common destiny. Brotherhood has always been a fact of our lives, sometimes it has been a brotherhood of slavery and torment, ignorance and its perdition, while at other times we are brothers for a common good, the fruits of which are love and liberty. This is so nobly expressed in the rhythm of James Russell Lowell:

"Men! Whose boast it is that ye  
Come of fathers brave and free;  
If there breathe on earth a slave,  
Are ye truly free and brave?  
If ye do not feel the chain  
When it works a brother's pain,  
Are ye not base slave indeed?  
Slaves unworthy to be freed!

Is true freedom but to break  
Fetters for our own dear sake,  
And with leathern hearts, forget  
That we owe mankind a debt?  
No! True freedom is to share  
All the chains our brothers wear,  
And, with heart and hand, to be  
Earnest to make others free!

They are slaves who fear to speak  
For the fallen and the weak;  
They are slaves that will not choose  
Hatred, scoffing and abuse,

Rather in silence shrink  
From the truth they needs must think!  
They are slaves who dare not be  
In the right with two or three."

Brotherhood has been taught for centuries; we now need to find a material basis for brotherhood. "By their fruits shall ye know them."

The success of our profession depends on its esprit de corps. There must be an animating spirit in every group. Neither a business, profession or army can succeed as long as it is filled with strife, jealousy, doubt, fear and uncertainty. This esprit de corps is largely supplied by the leader, and one can only inspire his associates with a spirit of victory by leading the way and saying with a fearless voice, "follow me".

The measure of a leader's success is his ability to organize, to enthuse every member of the organization to feel and know that they too share the responsibility and receive the results in the same proportion that they are willing to work. Man's business is to work—to surmount difficulties, to endure hardship, to solve problems, to overcome the inertia of his own nature; to turn chaos into cosmos by the aid of system. This is to live. Power flows to the man with ability; responsibilities gravitate to the person who shoulders them. In some cases a group of men deliberately select a certain individual whom they believe by right of years of service and scientific study, deserves an honor. These are idealists. Now and then we find leaders arising in the midst of a defeated army—great elemental forces silently working out the destiny of man have seized such apparently defeated men and touched their eyes with vision. They are rich by revelation, by habits of great seeing and great daring. Their battle cry of victory stirs other men's souls, even as their souls are fired by the confusion of uncertainty and defeat.

The medical profession is the right arm of the message of Christ. The ideal of our profession is one who is lowly, yet exalted; kind and tender, but exacting; long suffering and patient, yet dictating the lives of those about him; such leadership flavored with love and spiced with wit and humor; laughing at all the little misfits of life, sympathizing with those who have failed or stumbled. Such a doctor, his heart filled with courage and illuminating the future by the flambeau of a

great and living imagination, is the builder of his community.

A community is only possible where truth and loyalty abide. Weak and vicious people have no attractive force or coalescing principles. The enlightened cooperate, and by pooling their best in thought and effort, reach a degree of power and excellency that can be obtained in no other way. To this community the doctor owes his second allegiance. In turn, this community must retain the good and valuable services which the doctor has to give. He necessarily must fix his ideal on health, happiness and usefulness, and take his gaze off the warts, tumors, and inflamed appendices. Ordinarily the community believes in the doctor who believes in the community. Loyalty is that quality, that attribute which prompts a person to be true to a principle; it supplies power, poise, purpose, ballast, and works for health and success. It means definite direction, fixity of purpose. The doctor must have loyalty to his fellow man, his community and to his calling. It is this loyalty that prompts him to destroy his own business by teaching and showing people how to banish the demons of disease. Loyalty is the lubrication of life, it is the balancing power, the driving force that will make the doctor step into the gap and carry on during emergency. Who is better prepared? Are we not schooled by emergencies? When destruction of body and mind are evident, and death stalks the door, do we not attempt to stay his grim entrance?

You who are lukewarm to the affairs of government should awaken at least to the realization that the first interest of our American government is not to compel the people to do certain things and restrain them from doing other things, but it is to make the right life and the useful life the natural and easy one to live.

In this country of ours the average citizen must devote a good deal of intelligent, constructive thought and undivided time to the affairs of the state as a whole, or those affairs will go backward. We cannot decline to go through all ordinary duties of citizenship for a long space of time and then suddenly get up and feel very angry about something or somebody, not clearly defined, and demand reform, as if it were a concrete substance to be handed out forthwith.

We must keep clearly before our minds

the fact that brilliant ability or unusual genius play only a small part in government. It is important that the average man shall have in him the root of righteous living, a desire to help a weaker brother, and while not in any way losing his power of individual initiative, to cultivate without ceasing the further power of acting in combination with his fellows for a common end of social uplifting and of good government.

For weal or woe we are knit together and we shall go up or down together; we are all given the same qualities of heart and brain and hand which have made this republic what it is today; the same spirit will make it infinitely greater tomorrow.

The present condition of the universe was brought about by the inability of man to show restraint and subordinate individual passions and desires for the general good of the state or nation. Those who mean well, but feebly rise to action, will be of no help in the unending strife for civic betterment. Pardon can be granted to the man who has had no chance in life if he does but little for the state, but upon you who are so well qualified and who have had so many advantages rests a heavy burden to show that you are worthy of what you have received and the distinction that you cherish. A double responsibility is upon you to use aright the talents you have, not merely along professional lines, but along lines of philanthropy and public policies. Quoting the words of President Roosevelt in his last nation-wide address, "More and more of the burden of government must be placed on those who are able to pay, both in finances and in intelligence."

We are expected to put the utmost energy and every power that we have into the service of our fellowmen; we have a right to demand their cooperation in our attempt to protect them against disease, whether it is by our individual administration or by the enactment of laws sponsored by our profession.

I feel that the medical profession of Oklahoma has been cried awake by the voices of opposition. Let us here and now accept the challenge, by giving ourselves wholeheartedly to the cause of humanity, offering our lives endowed with pity and enforced by experience; to serve our profession, our community and our state for the common good of all.



# PUBLIC HEALTH AND ORGANIZED MEDICINE\*

CHAS. M. PEARCE, M.D.

State Commissioner of Health  
OKLAHOMA CITY

Before taking up my subject for discussion, I want to take this opportunity to thank the medical association for conferring upon me the honor of recommending me for the appointment which I now hold. For a number of years I have been deeply interested in health work and I want to assure this association that I will fill this office to the very best of my ability and will endeavor to do nothing that will embarrass or reflect unfavorably upon this organization.

You have been instrumental in having me placed at the head of your State Health Department, but it is only with your help and cooperation that I can in any degree make a success of my work. If each one of you will work with me for the next four years we can do things that will count in our state, and not let it be said that we took care of the cows and hogs but neglected our people.

Again I thank you for the confidence you expressed in endorsing me for your State Health Commissioner.

The science of public health rests upon medical science and upon the sciences of chemistry and engineering applied to such matters as disinfection and drainage and other physical aids to sanitary conditions. Its practical service is dependent also upon accurate records with regard to distribution of population, births and death, prevalence of disease and causes of deaths. These facts are listed under *Vital Statistics*, with emphasis on the *Vital*.

Since public health concerns itself with the conditions governing the physical well-being of communities, and organized medicine stands for the same principles; the two should advance hand in hand. One without the other is helpless, or at least greatly handicapped. Let us pause to consider that with our increased population and over-crowded living conditions, just where would we be with our handling of contagious diseases if public health had not evolved from our very own organiza-

tion and waged a battle upon epidemics. It has been said to me since I have been in health work that it is ruining the practice of medicine financially. I am sure that no physician in this audience is in sympathy with such a statement. How could we condemn an organization that is a part of our profession? If we were accused of being mercenary we would resent it, and rightly, for no doctor practices medicine just to get rich—if he does, the Lord pity him!

If organized medical groups will get behind a live, wide-awake public health program for the state it will not only help the profession and humanity but will ward off state medicine. Someone may say that health work is promoting state medicine, but you know this is not true, when you stop to consider that the free services we give are for people who are not able to pay for it, and the sanitation and prevention programs are to better living conditions for everyone. The available resources of a state are made up of the sum of its natural resources multiplied by its physical or vital resources. Natural resources, for the most part, are fixed; vital resources are variable; they may be increased by improving the condition of the public health or decreased by the prevalence of disease. If disease be held to the minimum and public health developed to the maximum, the community is free to exploit its natural resources, to produce the greatest possible wealth and prosperity. If the community is disease-ridden, the available wealth is held to the minimum because of the consequent inability to develop natural resources. Hence, effective public health work pays real dividends in improving the economic conditions of the community. We are justly proud of Oklahoma's natural resources, so let's get behind a program that will make us equally proud of her vital resources.

During these next four years we want to sell public health to our state—we want to make both urban and rural communities more desirable places in which to live. Within the next few months we want to

\*Address to Forty-third Annual Session Oklahoma State Medical Association, Oklahoma City, May 14, 1935.

inaugurate at least two traveling units equipped with a doctor, dentist, nurse, and a secretary—not to do actual work in a curative way, but to hold clinics, examine and advise people to go to their own physicians and dentists for attention. These clinics will reach an untold number of people who otherwise would not go to a doctor for a physical examination.

The functions and powers delegated to the State Health Department provide that the department shall have the general supervision of those things which are related to the health and lives of the people of the state and prescribe rules and regulations for the control and prevention of epidemic diseases, promote health regulations and

practices which shall be carried into effect by local health units, establish quarantine when necessary, and make sanitary investigations for the protection of the public health. We want to get as many of these county units organized as rapidly as we can do so.

The health department is fully aware of the fundamental contribution in the control of contagion and the advances in public health which have been made by the medical profession, and it is only by continued cooperation that progress can be made. If each physician who is a resident of the state will feel a personal responsibility to help make our health program a success, we cannot fail.

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## POST-OPERATIVE PNEUMOTHORAX—CASE REPORT, AND CONSIDERATION OF FACTORS THAT MIGHT be CONCERNED in its ETIOLOGY\*

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This paper deals with a case of pneumothorax, occurring eleven days after a heminephrectomy, with the possibility that it was consequent upon a massive atelectasis of the lung.

Weithe<sup>1</sup> in 1933 reported two cases of pneumothorax following inferior tracheotomy and was able to find one other in the literature. Keis<sup>2</sup> had one case and found four others subsequent to operations for goitres. Mayer<sup>3</sup> and Lemon and Barnes<sup>4</sup> have written of pneumothorax due to the induction of artificial pneumothorax. In a review of 7326 operations, Eliason and McLaughlin<sup>5</sup> tabulated 120 pulmonary complications, one of these being a pneumothorax, but the type of operation was not mentioned. Coombs<sup>6</sup> in 5894 operations, found 13 lung complications but no pneumothoraces, while King<sup>7</sup> in 7,065 operations did not mention pneumothorax as a complicating factor. And Brunn and Brill<sup>8</sup> in 456 operations described 33 pulmonary complications, none being pneumothorax.

Quoting from Lim<sup>9</sup>:

"I, myself, have had the experience of going thru

a pneumothorax. In my case, however, I believe it was due to a post-operative condition. I had a mastoid operation a few months previous to the spontaneous pneumothorax. I was walking one day to take a street car, and had gone about half a block, when I suddenly experienced a peculiar sharp pain in my side."

So that pneumothorax as an entity, complicating an abdominal operation, has not been clearly described.

### CASE REPORT

White, female, age 41, married, housewife, came to us complaining of discomfort, high left upper quadrant, in attacks of 1½ years duration, on April 17, 1933. Such attacks were accompanied by exhaustion and insomnia to the point where a dozen amytals were used during a month period. She had the feeling that something in her l. u. q. was at the back of her trouble.

Her past history contained nothing definite. However, she said, on direct questioning, that about 1915 she had passed a kidney stone.

Mother still living and well, father is said to have died of pellagra, two sisters of pertussis, and one brother in infancy.

Married twenty-five years. Five pregnancies, and five living children, all well. Some upsetting sexual difficulties with husband.

Menstruated last April 5, 1933, with difficulty.

No unusual illnesses. No headaches, cough, but in 1922 on direct questioning she spat up a little blood.

There was no indigestion, no use of laxatives. Up

\*Read in lieu of Chairman's Address, before the Medical Section of the Oklahoma State Medical Meeting, May 14, 1935.



once at night usually. Two weeks prior to admission had a good deal of discomfort over bladder, for a short while.

An apprehensive, exhausted, nervous appearing person. Weight 144, height 65 inches, blood pressure 110/80, pulse 120, breath foul, teeth in awful condition, lungs clear both on physical examination and fluoroscopically. Heart tones normal, abdomen negative.

Urine showed ten to twelve pus cells in a catheter specimen. Hemoglobin (Dare) ninety-five per cent, white blood cells 6,200, Kahn test of the blood negative, blood Wassermann negative.

Fluoroscopic examination of the stomach showed nothing abnormal. A flat plate of the abdomen found a dense shadow in the region of the right kidney. Upon urological work-up the diagnosis of right nephrolithiasis, right pyelonephritis and ureteritis cystica was made.

April 28, 1933 (ten days later), seven grains luminal, one-fourth grain of morphine and 1/200 grain scopolamine were given, and under spinal anaesthesia the right kidney was approached through a right loin incision, the stone removed, a heminephrectomy performed, a biopsy obtained from right ureter, and the wound closed with a cigarette drain to the lower pole of the kidney.

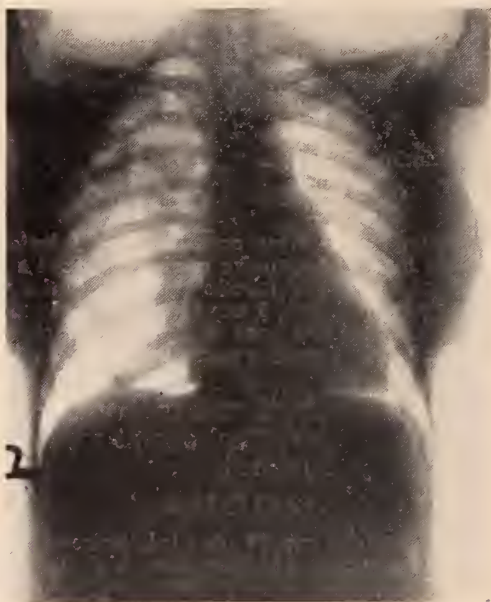


PLATE 1

Taken 36 hours after the lung accident. Note pneumothorax, right area of density from right hilus upwards and outwards, pushing over of mediastinum, and normal position of diaphragm.

The patient had a rather stormy post-operative period, with temperature rising to 102 degrees on the afternoon of operation, and thereafter falling gradually to 100 degrees, on the seventh day, at which level it remained more or less fixed. Her position in bed was being changed quite frequently. Suddenly, the evening of the eleventh day (May 9, 1933), patient became cyanotic, anxious; respirations jumped up to 38, and pulse to 160, without cough or pain. She appeared gravely ill; the list of pulmonary post-operative accidents was gone over and none tallied exactly to our cursory examination of her. We supported her. The next morning patient was still cyanotic, and now examination being made, it was found right chest was not moving and

no sounds were heard there. A tentative diagnosis of massive pulmonary atelectasis was made. Blood pressure at this stage was 120/80, and still there was no cough or pain, though vomiting had come on, induced perhaps by the opiates administered for restlessness. At the end of thirty-six hours the patient was moved for x-ray (the portable unit being out of pocket). The film showed a pneumothorax right about thirty-five per cent, and a large area of density in the right upper lobe adjoining the hilus, not extending to the periphery, the heart displaced to the left, diaphragm of normal height. Because of the prominent density around the hilus it was thought a massive collapse might have preceded the pneumothorax, because we had never heard of a pneumothorax following an abdominal operation. By this time respirations had dropped to twenty-four and pulse to one hundred and eight.

From this point the patient gradually recovered, though not without some difficulties from her operative field.

Another chest film nine days later (May 20, 1933), showed a gradual recovery of the pneumothorax and the disappearance of the density before noted at the hilus. Eleven days still later (May 31, 1933), the right lung was completely expanded. On the thirty-fifth post-operative day (June 2, 1933), the patient was discharged to her home.

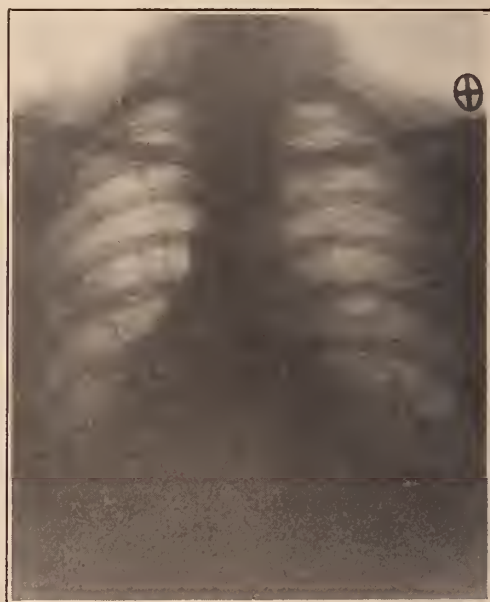


PLATE 2

Taken three weeks after the lung accident. Note recovery of pneumothorax completely and disappearance of area of density before noted.

We saw her last, recently, under nervous tension, having become sexually incompatible with her husband, and seeking our advice therefor. An x-ray on February 1, 1935, two years after the above mentioned lung\*accident, described clear lung fields.

#### DISCUSSION

In the absence of pulmonary tuberculosis, as we felt it was here, what were the series of changes happening to bring about a pneumothorax, post-operatively, abdominally, and not atelectasis as one would expect, and what we thought we had at one stage of the game. Experience

was with us; we had seen atelectasis, we had not seen pneumothorax; the literature was with us (Brunn and Brill<sup>8</sup> have produced statistics to show that massive pulmonary atelectasis comprise 67% of all pulmonary complications); and the literature does not correctly mention pneumothorax as a post-operative, abdominal thing; finally our case clinically suggested massive atelectasis and not pneumothorax.

Elkin<sup>10</sup> measured the intrapleural pressure in massive pulmonary atelectasis, finding it definitely, markedly lowered. We will designate this the lateral force. The mediastinum is to a degree mobile, and should be quite variable in such degree of mobility, from non-mobile to highly mobile. This, then, is the medial force. Between these two forces, in massive pulmonary atelectasis, is another force, created by the contracting, atelectacting lung, the intermediary force, tugging against both the lateral force and the medial force.

It is usually the medial force, the mediastinum that gives way, so that the mediastinum is pulled toward the affected side. It can be conceived, however, that the mediastinum couldn't give, and that therefore the lateral force would have to give, creating such a tension, especially in a partially atelectactic lung, that the aerated portion would burst, allowing the onrush of air into the pleural cavity, effecting a pneumothorax. And as Elkin<sup>10</sup> has shown, a pneumothorax aids in alleviating and dissipating an atelectasis.

Massive atelectasis could have preceded the pneumothorax in our case, and been gone by the time our first chest film was taken, at the end of 36 hours, and the preceding described forces acted to bring about the pneumothorax. It should be mentioned that our patient was moved frequently and that she vomited often, all of which could have acted, much as the Sante maneuver, of doing away with the atelectasis.

Sante<sup>11</sup> in 1928 first described massive atelectasis of the lung associated with pneumothorax, not occurring post-operatively, abdominally as is most often the case, but under the conditions set up by an asthmatic attack. He made an effort to explain this unusual situation. His chest film showed a small area of the upper left lobe still aerated, the remainder of the left lung being atelectactic. He felt that the change in pressure conditions resulting from the atelectactic state, bursted a bleb of this aerated portion, permitting an on-

rush of air into the pleural cavity, forming the pneumothorax. Such, we feel, were the circumstances surrounding the case herein treated.

We have repeatedly borne in mind injury, tuberculosis, embolus and resulting infarct, pneumonitis, pneumonia, but none has fitted into the picture.

#### CONCLUSIONS

As with Sante's case partial massive atelectasis of the lung could have preceded the pneumothorax, the pressure changes, that were brought about by the partial massive atelectasis, bursting the peripheral lung tissue and visceral pleura in the aerated portion, to permit the rush of air into an increased negative intrapleural pressure. Whereupon, the massive atelectasis was done away with, its remnants appearing as the hilus shadow, we have described, leaving the pneumothorax to itself. At its inception the clinical picture was not that of pneumothorax, but was that of either massive atelectasis or embolus.

#### SUMMARY

1. A case of pneumothorax, following by eleven days a heminephrectomy under spinal anaesthesia, preceded by luminal, morphine and scopolamine, is described.
2. Evidence is presented to show that this pneumothorax could have been effected by a preceding massive pulmonary atelectasis.

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## CANCER OF THE COLON AND RECTUM\*

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Experience so far indicates that rectal and other large bowel cancers are poorly susceptible to radiation therapy and that the normal mucous membrane of them is sensitive to it. Accordingly the treatment of choice up to this time is surgical removal of the growth and adjacent tissue whenever possible, followed by deep x-ray of an intensity that is safe against damaging normal structures. Coagulating diathermy to suitable accessible growths is indicated in certain cases.

The symptoms and treatment of cancer of the rectum vary according to the three locations where it generally occurs. A growth very low in the rectum (adenocarcinoma) or the squamous cell carcinoma of the anus, may be treated properly by an operation which simply amputates an adequate amount of the terminal tract and surrounding tissue. In different cases I have done this with and without doing a colostomy and with and without complementary radiation. The anal growth gives pain much sooner than one in the rectum and should be diagnosed early. However the lymphatic drainage is to the groin and if there is metastatic involvement of the inguinal glands we do not ordinarily advise surgery.

Some of these cases with low involvement do not require proximal colostomy and despite the anus having been removed and the rectum sutured into its location, they manage the consistency of the feces to a satisfactory degree of continence. Seven years ago there was reported to this society a man having been treated for a cancer about three inches in diameter situated at the upper anus and adjacent rectum. I departed from routine in that case and did only a local excision of the growth with all of the underlying rectal wall. The radiologists prescribed and placed a radium pack the next week and although his wound required secondary suture, he has reported to us, and is alive in good health, seven years later.

Most patients with cancer originating

in the wall of the ampulla of the rectum have had symptoms (change of bowel habit, alternation of constipation and loose bloody mucus discharges) for nearly a year before deciding to submit to surgery. By this time more than a posterior amputation of the rectum is required if the principles of radical surgery for cancer are followed. American and British experience shows the best results from left abdominal colostomy and combined abdomino-perineal removal of the lower sigmoid with its mesentery, the contents of the hollow of the sacrum, the rectum and anus with parts of the levators and ischio-rectal fossae. I advise this only when the growth has apparently not gone beyond the rectum in the pelvis and the general condition of the patient is good enough for at least a two stage operation, the variations of which we cannot enumerate in the short time allotted here. Suffice it to say that if in doubt I insist on the establishment and functioning of a colostomy before deciding when to resect the growth. A single barrel colostomy is preferable. Decision may be made to remove part of the "pre-sacral nerve" in inoperable cases for respite from the sacral pain attending them.

The third and probably the most frequent location for so-called rectal cancer is the rectosigmoid. Starting here it may invade downward into the rectum. Or a real sigmoid growth may sag enough into the rectum that it seems to be growing there. At laparotomy several times in such cases when the growth was lifted up I was able to resect it and have enough peritoneal covered bowel below to ultimately conserve rectal function. A true rectosigmoid or upper rectal cancer requires the combined abdomino-perineal procedure mentioned above for its removal. Unfortunately some of these patients with a small annular scirrhous growth become acutely and sometimes totally obstructed before seeking medical aid. The first treatment in that situation will have to be only a colostomy or a cecostomy as an emergency measure. In several cases acutely obstructed I have been able under

\*Chairman's Address, Surgical Section Annual Meeting, Oklahoma State Medical Association, Oklahoma City, May 14, 1935.

vision thru the protoscope to guide a catheter thru the obstructing encroachments of the malignancy with immediate relief of the distention. This is of course much less shocking to a patient with intestinal obstruction and malignancy than an emergency abdominal operation.

For growths even up into the lower one-third of the sigmoid an accurate diagnosis can usually be made at the patient's first visit to the office by taking a minute biopsy thru the proctosigmoidoscope. It is an office procedure, reserved usually however for those who have decided to have indicated treatment given in the locality where the biopsy is taken, without undue delay. To use up the patient's time and money building him up for an *exploratory* laparotomy where and when it is not expected also to do indicated surgery remedial to the condition, is not justified.

For growths from the middle third of the sigmoid, or perhaps lower in thin patients, up thru the descending colon to and including the middle of the transverse colon, the resection of choice is a modified Mikulicz mobilization and exteriorization of a V of mesentery together with the affected bowel which is taken off with the cautery. This leaves a temporary colostomy of a double barrel of normal bowel in the abdominal wall. Much has been said of this colostomy closing spontaneously when the spur between the two limbs of colon is crushed. In my experience this usually will not occur spontaneously and one would just as well, a week after the crushing, go ahead with operative closure of the colostomy, which is easily done under local anaesthesia.

Symptoms of some obstruction occur in the growths of the left half of the colon and may be so severe that a cecostomy has to precede even the Mikulicz procedure on the growth.

Adequate removal of malignant growths in the right colon usually calls for a right hemi-colectomy with end to side anastomosis of the ileum to the transverse colon. If this is done in one stage a Witzel enterostomy of a catheter into proximal small intestine provides a safety valve post-operatively. The toxic absorption from growths in the right colon often gives a patient requiring a two-stage operation—ileo-colostomy first followed later by resection.

The advantages of the modified Mikulicz procedure is getting immediate riddance of the growth and a lowered operative

mortality. This has led Lahey to advise its application even to the right colon, the exteriorized double barrels being ileum and right of the transverse colon when used there.

Improved results in large bowel surgery are partly due to pre-operative measures—building up the patient's carbohydrate storage, fluids and transfusion of blood if necessary, intra-peritoneal vaccination before one-stage operations, and preliminary cleansing measures that obtain a clean empty bowel at the time of operation. Ultimate results compare favorably with cancer surgery in the upper gastro-intestinal tract and elsewhere in the body.

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#### PRESENT STATUS OF MEAD JOHNSON VITAMIN A RESEARCH AWARD

This award was originally established by Mead Johnson & Company January 30, 1932. "Mead Johnson & Company announces an award of \$15,000 to be given to the investigator or group of investigators producing the most conclusive research on the vitamin A requirements of human beings." (See J. A. M. A., January 30, 1932, pages 14-15.)

On February 11, 1933 (J. A. M. A., pages 12-13), "At the suggestion of the Judges, a second (additional) Award of \$5,000 is now offered. The basis for this enlargement is in the obvious possibility that within the time limit set (Dec. 31, 1934), no suitable evaluation of the vitamin A requirements of human beings will have appeared. On the other hand, a laboratory investigation may have been published which will point the way toward clinical evaluation."

On that date, the Judges for the award were announced:

Issac A. Abt, Northwestern University; K. D. Blackfan, Harvard University; Alan Brown, University of Toronto; Horton R. Gasparis, Vanderbilt University; H. F. Helmholtz, Mayo Clinic; Alfred F. Hess, Columbia University; E. V. McCollum, Johns Hopkins University; L. B. Mendel, Yale University; L. T. Royster, University of Virginia, and Robert A. Strong, Tulane University.

The Judges met in Detroit, April 10, 1935, and took the following action:

(1) To postpone until December 31, 1936, awarding of the main (Clinical) Award.

(2) To divide the second (Laboratory) Award, one-half to Dr. S. B. Wolbach, Harvard University, for his basic work on the pathology of avitaminosis A and his investigations on the regeneration of epithelial tissue impaired by vitamin A deficiency, and the relationship of vitamin A to the integrity of the teeth; and one-half to Dr. Karl E. Mason, Vanderbilt University, for distinguishing exactly between the pathology of avitaminosis A and avitaminosis E, and for his contribution to the quantitative relationship of vitamin A deficiency to the keratinization of germinal epithelia.

Some of this original work is still in press.

Checks for \$2,500 each, in accordance with the decision of the Judges, were promptly mailed by Mead Johnson & Company to Dr. S. B. Wolbach and to Dr. Karl E. Mason.



## ACUTE MASTOIDITIS\*

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*Definition:* Acute mastoiditis is an infection of the mastoid cells, caused by virulent organisms, almost always secondary to an infection of the middle ear. There are cases however of pneumococcus and more especially influenza infection, which sometimes appear in the mastoid cells without first affecting the middle ear.

It has been stated that all, or nearly all, suppurative middle ear infections involve the mastoid cells. They may rarely become infected from a destruction of the posterior canal wall.

*Anatomical Considerations:* Hays states that the mastoid process is a prismatic mass of bone situated behind the ear. Its upper part has a broad base which blends with the rest of the temporal bone. Within the temporal bone it is filled with small cells separated by small laminae, which vary considerably in size and shape; some may be minute in size, while others are as large as a peanut. There is a definite communication between these cells which may be very hard to see. The cells may not be confined to the temporal bone, but extend to the adjacent parts of the temporal and occipital bony regions nearby.

The boundaries of the mastoid process may be described in general terms, though the anatomy varies so much that there is seldom two similar processes.

The anterior limit is the posterior wall of the ear canal. The superior limit is the external skull plate of the temporal bone, which may be outlined by drawing an imaginary line through the zygomatic process of the malar bone. Posteriorly it is bounded by the dense structure of the occipital bone. Below it is rounded off into a teat-like process, the tip of the mastoid, which can be readily felt as a prominent mass of bone behind the lobe of the ear. Internally it is bounded by the skull plate, sometimes very thin, at other times very thick, behind which lies the temporal lobe of the cerebrum, and more posteriorly the cerebellum. An elevation of the bone

makes a groove for the sigmoid sinus, which is directly continuous with the jugular vein below, and with the lateral sinus above and posteriorly.

A structure of greatest importance is the facial nerve which emerges from the internal auditory canal, with the auditory nerve, winds forward and outward, until it reaches the facial canal, which is a groove deeply imbedded in the posterior wall of the canal, runs down the canal to the tip of the mastoid, does not enter it but goes deeper, emerges from the stylomastoid foramen, spreads itself in numerous branches through the parotid gland and on to the face.

The external covering of the mastoid process is a plate of bone which may be very thin, with cells immediately underneath, or it may be very thick, necessitating a lot of chiseling before one reaches the cells. In young children it is not uncommon for the pus to be under such pressure that the bone becomes eroded, causing a perforation in the cortex.

The communication between the middle ear and the mastoid process is by way of the antrum, through the attic of the middle ear. The attic is posterior and superior to the middle ear and contains the body of the incus. Directly behind it is the antrum, a large cell which varies considerably in size, with its upper limit directly below a spicule of bone, called the supra-meatal spine.

I have recently operated two cases in which this opening between the middle ear and the mastoid cells was so small, the bone so dense and hard that it was difficult to get into the antrum.

*Etiology:* The main causes of mastoiditis are infections of the middle ear, following an acute purulent otitis media, or an infection the result of a furunculosis of the ear canal. In rare cases it may follow an injury to the mastoid process. It has been claimed that the bacteria from the streptococcus group are the most virulent, particularly the streptococcus mucosus capsulatus. Other organisms less

\*Chairman's Address, read before the Section on Eye, Ear, Nose and Throat, Oklahoma City, Okla., May 14, 1935.

virulent are the pneumococcus, pyogenic staphylococci and the bacillus of Friedlander.

*Pathology:* Ballenger states that during the course of exanthematous fevers the vitality is lowered, and pathological changes occur in the mucosa of the epipharynx and middle ear, the microorganisms continue to flourish, and the suppurative process is established. The cilia covering the tympanic mucosa are destroyed or lose their function, and their vitality is so lowered that they are no longer able to drive the secretions towards the eustachian outlet. The mucosa breaks down, the periosteum covering the bone loses its vitality and begins to disintegrate, the arteries in the mucosa become thrombosed, and thus the blood supply to the mucosa and periosteum of the bone is cut off. Even the brain may be exposed by the carious processes in the bone.

*Symptoms:* These are well known and hardly bear repeating here. Assuming that the tympanum has been opened, or has ruptured spontaneously, we will find in children sometimes a high temperature, reaching as much as 104 or even more, there is much distress from the pain and tenderness, and the patient is usually unable to sleep. There will be found much more discharge from the canal than can be accounted for simply because of a middle ear infection. It pours out so fast that the pieces of cotton in the canal have to be changed every few minutes. The discharge may be serous in character at first, but soon changes to a very thick pus.

The canal may be swollen and tender and there is a tendency to prolapse of the posterior wall. It has been stated that this last sign is a positive indication for surgical intervention.

The pain over the mastoid is so great at times that any attempt to examine for tenderness is resisted. Deep pressure over the antrum will make the patient cry out in distress. After the incision of the drum membrane, many children seem to get well. The temperature may drop almost to normal, and range up to 100 or 101 degrees. The discharge from the ear still remains profuse, or it may decrease for a time and then start up again.

The blood count may be of value. It may show an increase of white cells up to 15,000 or even 30,000, and the polymorphonuclear cells are increased. A relatively low blood count, in the presence of high temperature and discharge from the ear,

is of graver significance than a high blood count and a high fever at the onset of the disease.

A child may eat well and sleep well, and in some cases the temperature continues to remain low, and he plays about as usual but tires easily and does not look well. Often there is a complaint of indefinite headache, and there is a noticeable impairment of hearing.

As the disease progresses the symptoms become more and more apparent, the child looks and acts sick, and there may be a swelling behind the ear from a sub-periosteal abscess. Inspection of the drum with the otoscope will usually reveal pulsation of the edges of the opening, and the patient complains of a throbbing in the ear.

*Indications for Surgical Intervention:* Taking for granted that the usual abortive therapeutic measures have been carried out, namely: incision of the drum membrane, repeated if thought necessary; ice over the mastoid process; heat; cathartics and frequent cleansing of the canal; these having failed, then we may have any or several of the following indications:

1. The discharge tends to become chronic, i. e., four to eight weeks. To wait longer may result in impairment of hearing.

2. Bulging or sagging of the posterior-superior wall of the canal, near the tympanic membrane.

3. Pain over the mastoid antrum and tip which continues for two or three weeks, with evidence of toxemia.

4. Continued infiltration and redness of the mastoid region, indicating a blocking of the secretions.

5. The presence of a sub-periosteal abscess over the mastoid process.

6. Continued temperature changes which cannot be accounted for otherwise.

7. Meningeal irritation, as evidenced by convulsions in children, delirium, intense headache, stiffness of the muscles of the neck, etc.

8. Other and more serious symptoms, as circumscribed meningitis, serous meningitis, thrombosis of the lateral sinus and epidural abscess.

The above symptoms and indications may vary somewhat in the adult but on the whole they are similar to those in children, with the exception that the pain and temperature may not be so great in the child.

*Differential Diagnosis:* This should be



considered both from the standpoint of the child and the adult. In children we must keep in mind three important conditions: acute tonsillitis, acute bronchitis or pneumonia and pyelitis. When the ear signs are not of sufficient importance to warrant the conditions present we must look elsewhere for our cause of the symptoms.

Glandular inflammation of the neck and about the ear have been very common, and it is sometimes impossible to tell whether the general symptoms are due to the ear or the inflammation in the glands.

In adults the difficulty is not usually so great because we can put a more definite interpretation upon subjective symptoms.

Furunculosis of the ear canal must always be considered. I recall with embarrassment a case of this which was operated upon, with normal mastoid findings.

Influenza, pneumonia, pharyngitis, laryngitis, tonsillitis, glandular swellings over the mastoid and pyelitis are not usually hard to differentiate in adults.

The surgical procedures necessary in acute mastoiditis will not be inflicted upon you in this short paper. Suffice to say that the technique should be as simple and complete as is necessary to get the results we hope for. It is better to have a short,

simple and safe operation, even if we leave a few cells, then to have a long, dangerous and tedious one, with a complete curettement of all cells, and find to our dismay that our patient has a facial paralysis afterwards.

*Recapitulation:* I realize that it is impossible to go into details without inflicting too many well known facts upon you and trying your patience. We all know that each case is a problem to itself; that no hard and fast rules can be laid down which will fit all cases. I have recently operated a case of acute mastoiditis in which there was at no time any perforation or drainage through the tympanic membrane. The symptoms were so evident, the diagnosis so easily made, that I felt justified in reversing the procedure and opening the mastoid first and the tympanum afterwards. The findings at operation I am happy to state were as expected; the cells necrotic and filled with pus and a very small opening, difficult to find, from the mastoid cells into the antrum, which probably accounted for the fact that the drum had not ruptured. The patient stated within 24 hours that the pain and headache were all gone, the temperature dropped to normal, and she said she felt better than she had for some time past.

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## OBSERVATIONS BEARING ON THE USE OF ULTRA-VIOLET RAYS AND SUNLIGHT

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MARQUE O. NELSON, M.S., M.D.  
TULSA

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An atom theoretically consists of a system of electrons or negative electrical charges in orbital motion about a central positive charge. The orbit of an electron ordinarily is stable but under varying energy environment may be changed. According to the theory of Bohr, "when an electron moves towards the central nucleus, passing from an orbit with a longer radius to one with a shorter radius the energy it loses is emitted in the form of monochromatic light, or, in other words, in the form of electromagnetic waves having a definite wavelength."<sup>1</sup>

Ultraviolet is radiant energy of wavelength 200 to 3900 angstroms.\* Visible light extends from 3800 to 7600A and in-

fra red from 7600 to 3,000,000A (0.3 m.m.).

### SOURCES OF ULTRAVIOLET RADIATION

*The Sun*—Ultraviolet in appreciable amount is produced only at high temperatures—3000° C. or higher (Coblentz). The temperature at the surface of the sun is about 5500 or 6000° C. Radiation from the sun occurs at the expense of its mass, 360,000 tons of matter being dissipated each day.<sup>2</sup> Although but a small percentage of the energy received at the earth's surface is in the form of short wavelength ultra-

\*Angstrom unit—1-10,000,000 m.m.

1. Berthoud, Alfred: "New Theories of Matter and the Atom." MacMillan Company, New York, 1924.

2. Maxim, H. P.: Sci. Amer. April, 1932, p. 199.

violet the absolute amount, owing to the great intensity of total solar radiation, may be large.<sup>3</sup> The percentage varies with the time of day, season of the year, latitude, altitude, quantity of water vapor and dust particles in the atmosphere, the barometric pressure and other factors. In midsummer in temperate latitudes and moderately low altitudes, sunlight at noon on clear days contains ultraviolet rays as short as 2900A but only a small percentage of the total is below 3100.<sup>4</sup> The spectrum of the sun extends from 2900 to above 10,000A and consists of a very large number of emission lines so close together as to make it practically continuous. It is most intense in the visible region of the green, at about 5000A. In the spring the shortest wavelength is 3010A and in winter 3130A but the percentage in these spectral areas is too low for any practical consideration.<sup>5</sup> At wavelength 3240 on December 23, the intensity of solar ultraviolet in New Mexico was found to be 64% of that on October 28. In summer months the intensity was higher. On October 28, the intensity of wavelength 3240 was found to be<sup>6</sup> at:

10:00 A. M.	85%	} of intensity at noon
11:00 A. M.	97%	
1.00 P. M.	76%	
2.00 P. M.	64%	
3:00 P. M.	36%	

At wavelengths below 3240 in the physiologically more effective portion of the spectrum the curve of the ultraviolet probably tapers off even more rapidly on each side of noon. Accordingly, the highest percentages of ultraviolet in solar radiation would be found at noon on clear days in midsummer at high altitudes and in a dry climate. Contrary to what might be supposed the ultraviolet content in the smoky air of cities has been found to be as high as 85 or 90% of that in the clear air of rural communities. On the other hand in the city the ultraviolet at street level may be only 10% of that on the tops of buildings directly above.<sup>7</sup>

Besides the direct radiation from the sun, a natural source of ultraviolet that deserves attention is skyshine. At Mount Wilson skylight was found to be several times richer in ultraviolet than direct sunlight.<sup>4</sup>

**The Carbon Arc**—Radiation from the carbon arc is similar to that of the sun in

having a nearly continuous spectrum but there are differences in spectral energy distribution. There is a very intense emission at 3883A in what is called the "cyanogen band" and beyond 40,000A in the long infra red there is a large amount of radiation not present in sunlight.<sup>5</sup> The radiation from pure carbon arcs is very weak in wavelengths under 3200A and of little practical value if an appreciable ultraviolet content is desired. The intensity and composition of the emission of carbon arcs vary with the differences in voltage and amperage and with the diameter of the carbons. When the current used is high, the carbon arc is capable of emitting relatively large amounts of ultraviolet radiation. By impregnating the carbon electrodes with various metals a satisfactory amount of ultraviolet shorter than 3200A is obtainable.

The "white flame" (nickel) carbon arc has a high spectral emission of ultraviolet from 3000 to 3400A and a moderate emission from 4500 to 5000A. When a window of special glass is used which removes the rays shorter than 2900 and longer than 40,000A, the spectral limits are similar to those of sunlight, although the percentage of rays of different wavelength is still far from being the same.<sup>5</sup> Whether it is important in irradiation therapy to use a source having a spectral energy distribution similar to that of the sun is not yet determined. However, the nickel cored arc properly used emits radiation which in spectral characteristics more nearly duplicates sunlight than that of any other type of artificial generator.<sup>8</sup>

**The Mercury Vapor Arc**—The spectral emission of the mercury vapor arc is characterized by a series of bright lines from 2570 to 5790A and several in the infra red from 10,000 to 12,000A, which are mainly from the heated quartz burner. Between these lines, practically no radiation is emitted. About 6% of the total radiation is of wavelength shorter than 2900A which is absent in sunlight.<sup>5</sup> The shortest waves generated are at 1850A. In relation to total output the mercury vapor arc is the richest source of short wavelength ultraviolet available.

**The "Cold Quartz" Lamp**—This is a mercury vapor lamp having an electrical setup such as to make it radiate a relatively small amount of heat. About 95% of the radiation of wavelength less than 3,-

3. Coblentz, W. W. and Kohler, H.: J. A. M. A. 98:1788 Bur. Stds. Sci. Paper 378, 1920.

4. Mayer, Edgar: Present Status of Light Therapy, J. A. M. A. 98:221-230, Jan., 1932.

5. Coblentz, W. W.: Sources of Radiation and Their Physical Characteristics, J. A. M. A. 95:411, April 9, 1930.

6. Wylder, Rockwood, and Lippincott: Ann. Int. Med. 7:605-614, Nov., 1933.

7. Ellinger, F.: J. A. M. A. Foreign Letters, Berlin 99:1097, Sept. 24, 1932.



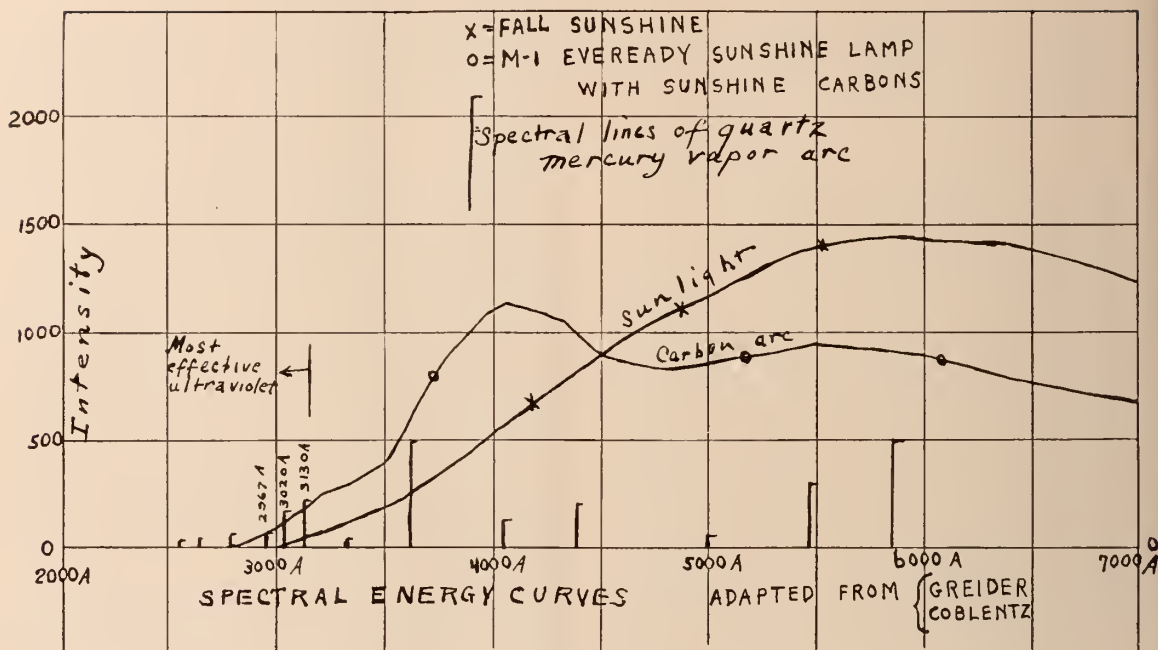


CHART ONE

130-A is emitted in the resonance line of mercury at 2537A.<sup>5</sup>

*The "S-1" Lamp*—The S-1 or "sun lamp" has a generator that consists of a tungsten filament and mercury vapor arc combined. Under proper conditions the radiant flux from this lamp is similar to that of average midday midsummer sunlight in temperate climates at sea level.<sup>5</sup>

#### PHYSICO-CHEMICAL PROPERTIES OF THE RAYS

Different wavelengths have different physical properties and effects on chemical reactions. The penetrating power of ultraviolet rays is small; the rays of the visible spectrum and the infra red rays vary a good deal in their penetrability of different substances. Ultraviolet rays shorter than 3200A are almost entirely absorbed by window glass; those shorter than 3000A are strongly absorbed by water vapor and atmosphere. Quartz transmits about 80% of the ultraviolet at 2000A. The corneal and prickle cell layers of the skin absorb strongly the rays at about 2800A but not those on both sides of this band at 3000 and 2500A, which penetrate to the basal cell layer and the corium. From about 2500A down, absorption in the corneal layers increases until at 2000A it is so complete that none reaches the living layers of the skin.<sup>9</sup>

Heat production is mainly associated with infra red and red rays, some of which

(those between 7600 and 14,000A) are capable of penetrating fairly deeply into living tissues.

#### BIOLOGICAL EFFECTS OF THE DIFFERENT WAVELENGTHS

Although the physiological principles underlying the action of radiant energy on living cells remain unknown, certain biologic effects have been shown to be characteristically associated with particular wavelengths. Visual sensation is excited by wavelengths between 3800 and 7600A. Saidman<sup>10</sup> found visibility of wavelengths from 3130A up constant in youth but disappearing between the ages of 34 and 43. Erythema is produced by wavelengths shorter than 3130A, with the maximum effect at 2967A and a lesser maximum at 2500A. Since rays of these wavelengths penetrate to the basal cell layer and the corium, erythema must originate in or about these cells. Red and infra red rays are capable of producing an erythema of short duration but this is not like the erythema caused by ultraviolet and is not well defined. The erythema characteristic of ultraviolet is sharply limited to the exposed area. It is accompanied or caused by degenerative tissue changes in the prickle cell layer and inflammatory changes which may be severe.<sup>4</sup> Infra red rays applied simultaneously may make the skin more susceptible to ultraviolet. Bach-

8. Communication from the Bureau of Standards.

9. Bachem, A. and Reed, C. I.: Am. Jour. Physiol., 97:86, April, 1931.

em and Reed found that ultraviolet at 2800A is strongly antirachitic. Since this wavelength is absorbed mainly by the corneal and prickle cell layers of the skin the antirachitic effect is thought to be associated with these layers.<sup>4</sup> On the other hand Lucas<sup>11</sup> has shown that ultraviolet rays transmitted by the skin are sufficient in amount to activate ergosterol in the capillary vessels underlying it. Wavelengths above 3130A are not antirachitic nor do they produce the characteristic erythema of ultraviolet. Wavelengths from 2750 to 3130 convert over 60% of ergosterol to vitamin D, while those shorter than 2800A have the power of destroying it, if the exposure is sufficiently prolonged.

Exposure to ultraviolet radiation in most individuals causes pigmentation of the skin. Pigmentation is most marked and rapid following erythema reactions and is probably associated mainly with wavelengths having the greatest erythemogenic efficiency (2500 and 2967A). Pigment absorbs ultraviolet as well as visible light, preventing these rays from reaching the underlying tissues. The color of pigmentation caused by solar and carbon arc radiation differs from that produced by exposure to radiation from mercury vapor arc. Pigmentation from the sun and the carbon arc tends to a reddish brown, that from the mercury vapor is of a yellowish hue.

#### BACTERICIDAL ACTION

Ultraviolet rays below 3130A are bactericidal, the intensity of the effect varying with different species of bacteria. Gates<sup>12</sup> found the maximum bactericidal efficiency associated with wavelengths around 2600 and 2700A. If the total en-

ergy absorbed is constant, greatest bactericidal effects are obtained with high intensities for short periods rather than low intensities for long periods.<sup>13</sup> The bactericidal action of ultraviolet may be of some practical importance, a lethal effect having been observed on bacteria in the air and on the surface of the skin. The bactericidal action is thought to be due to a destruction of the protein molecule within the cell as well as to a destruction of lipoids in the surface membranes.<sup>4</sup>

#### CLINICAL INTERPRETATION

In any work dealing with radiation effects, some idea of the intensity and spectral characteristics of the radiation used is necessary if valuable knowledge concerning it is to be gained. Neglect of this fundamental has rendered a large portion of the reported work with ultraviolet valueless. Notwithstanding, a certain amount of information which is at least tentatively acceptable is available. For instance, it has been fairly well established that ultraviolet radiation, if sufficiently intense and prolonged, is capable of preventing and curing rickets, and other calcium deficiency diseases in children. This effect is evidently traceable to an improvement in calcium and phosphorus metabolism caused by Vitamin D, which is produced in the skin through the activation of ergosterol by the ultraviolet rays. Likewise, properly irradiated milk, milk from irradiated cows, and from cows fed irradiated foods, especially yeast, has been shown to be prophylactic against rickets. Prenatal and postnatal irradiation of the mother renders the milk antirachitic. On the other hand just how far sunlight, artificially produced radiation and irradiated sub-

11. Biochem: J. 27:132, 1933.

12. Gates, F. L.: J. Gen. Physiol. 14:31, Sept, 1930.  
13. Bachem, A. and Dushkin, M. A.: Proc. Soc. Exp. Biol. and Med. 30:700-704, March, 1933.

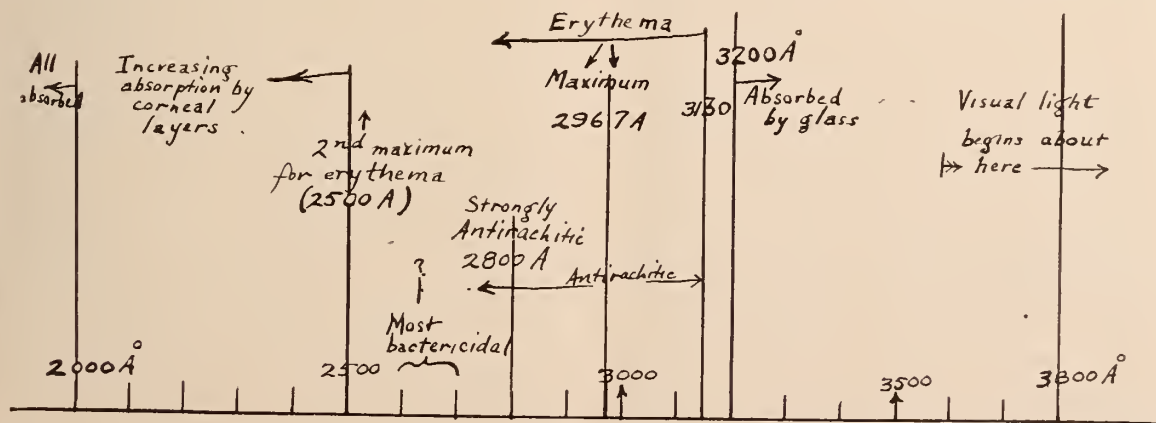


CHART TWO



stances, including viosterol can be depended on in the prevention and cure of rickets remains to be seen. The mechanism of production of rickets is not itself completely understood and the requirements for its prevention and cure have not been entirely worked out. It is possible that a constant supply of Vitamin D may not be necessary and so far as is known may even be harmful. It is certainly true that sunlight, viosterol and irradiated foods cannot be considered as therapeutic equivalents.

The phytosterols of plants are activated by ultraviolet. Sunlight or skyshine is indispensable to the production of chlorophyll in nature. It has not been demonstrated conclusively that ultraviolet irradiation is capable of increasing amounts of hemoglobin or curing anemia nor that it tends to prevent colds or stimulates or improves the tone of the body. Neither has it been established that ultraviolet is necessary to the maintenance of general health—miners, for example, having lived in good health for many years with little or no exposure to ultraviolet rays.

Curative effects of ultraviolet rays and sunlight have been reported in a wide variety of conditions. Early workers were for the most part enthusiastic about the effects of ultraviolet but a good deal of this enthusiasm has subsided and recent reports are more conservative. At one time ultraviolet radiation was generally recommended with little reserve for use against tuberculosis. Now it is thought to be definitely contraindicated in the pulmonary form of the disease and regarded merely as an adjunct in other types.<sup>4</sup>

In dermatologic conditions the effect of irradiation with ultraviolet has in general been disappointing. In acne vulgaris and psoriasis, ultraviolet irradiation is sometimes of value but its effects are likely to be only temporary, and better results can usually be obtained by other means. In lupus vulgaris irradiation with the Finsen lamp has apparently been of value, but the exact role played by the ultraviolet in such cases has not been definitely determined. Some cases of pityriasis rosea have been favorably influenced by sharp erythema reactions. Good results are claimed for ultraviolet radiation in erysipelas and dermatitis venenata but in such self-limited

conditions the therapeutic contribution of the ultraviolet is hard to evaluate. Under critical observation the results are not convincing. In most other dermatoses irradiation with the ultraviolet is of little or no value and in some, especially psoriasis, lichen planus and certain types of eczema, the condition may be aggravated. In lupus erythematosus reactions to ultraviolet have led to fatal exacerbations.

#### TECHNIC

Instruments for the accurate physical measurement of ultraviolet are not available to the average worker. Even if they were dependence could not be placed on physical measurements alone, owing to individual susceptibility to the rays. For the purpose of measuring dosage some physiological standard is necessary. A convenient standard of this sort is the erythema response. The capacity for producing erythema is a fair measure of the physiologic effectiveness of ultraviolet radiation, and serves as a handy control for experimentation and clinical use. Sunlight and artificial radiation that is not capable of producing erythema on untanned skin in a reasonable length of time contains so little ultraviolet below 3130A as to be of no practical value.

According to Coblenz, the approximate ultraviolet energy of wavelengths less than 3130 present in mid-summer sunlight at noon on a clear day in Washington D. C., is about 91 microwatts per square cm.<sup>15</sup> This amount of solar ultraviolet is equivalent in erythema-producing power to 20 microwatts of homogeneous radiation of wavelength 2967A, the wavelength of maximum erythemogenic efficiency, and is capable of producing an erythema on the average untanned skin in about 20 minutes. By comparing the erythemogenic efficiency in any radiation with this standard a rough measure of its physiologic effectiveness can be obtained.

The production of erythema and physiologic effects generally vary considerably from person to person and in the same person under different conditions. The complexion and texture of the skin, whether light or dark, tanned or untanned, thick or thin, dry or moist, location on the body, the amount of scaling present, size of the area, the angle at which exposed and the age of the patient affect the result. Dry cool skin requires about twice as long an exposure to produce erythema as warm moist skin, probably because of the reflection of the rays and the smaller amount of

14. Supplee, Dorcas and Hess; Jour. Biol. Chem. 94:749-763, January, 1932; Mitchell, et al., Amer. J. Pub. Health 22:1220-1229, December, 1932; Hess, A. F.; Amer. J. Pub. Health 22:1215-1219, December, 1932; Hess and Weinstock; J. Biol. Chem. 66:145, November, 1925.

blood present in the capillaries. The intensity of total ultraviolet in winter sunlight is about one quarter that in summer sunlight but owing to the difference in amount of short wavelength radiation, the erythemogenic efficiency is much lower.<sup>15</sup>

Winter sunlight is therefore not dependable for therapeutic or rickets preventing purposes.

An important consideration in radiation therapy is the temperature and condition of the surrounding air. If ventilation is not good or the patient becomes overheated, the treatment may have injurious effects. An interesting instance of this air and temperature combination is mentioned by Rollier. One of his patients, a doctor, found an air temperature of 46° F. and a sun temperature of 122° stimulating, but an air temperature of 73° with a sun temperature of only 113° "very exhausting." In other words, the patient must be kept cool; if this is impossible irradiation must be of short duration and frequently interrupted.

There is some disagreement as to whether erythema is necessary in treatment. Although beneficial results can be obtained under certain conditions without it, erythema is the only clinical indicator of a content of ultraviolet shorter than 3130A, intense enough to be of practical value. Coblenz suggests as a minimum amount necessary to protect against rickets a daily exposure to ultraviolet amounting to 25% of the minimum erythema dose. Most clinicians prefer to depend on the production of a mild erythema, except in a few instances. In certain conditions an intense erythema may be necessary to bring about the desired result, but overdosage can be toxic and should be avoided.

The choice of source of radiation to be used depends on the effect desired. Except where a local reaction is the only object heliotherapy cannot well be compared with artificial irradiation. The combination of the infra red, visual light and ultraviolet in the continuous spectrum of the sun differs from that in radiation from artificial generators and may be of intrinsic value apart from concomitant environmental factors.

Heliotherapy, with the complete relaxation, mental tranquillity, fresh air, regulated diet, and the stimulation of moderate exercise in the open that can accompany

a sojourn at a sanitarium in the mountains is not the same as a few minutes irradiation daily with a quartz mercury lamp. On the other hand, where local effects are desired the reaction to measured amounts of irradiation from artificial generators can be much more accurately estimated than the effect of sunlight in most climates, with all the variable conditions affecting its intensity at different times.

#### SUMMARY

In spite of a large amount of work done on the subject, knowledge of the physiologic effects of ultraviolet and solar radiation on human beings is still very imperfect. In applying this type of radiation use should be made of fundamental data already accumulated. Irradiation with energy from artificial generators must not be confused with heliotherapy. Results of irradiation of lower animals are not directly translatable to man. Only prolonged and thorough clinical observation will lead to true knowledge of its effect on human beings. Owing to the complexity of conditions altering radiation effects, it is well to deliberate carefully before drawing conclusions.

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#### NEW TREATISE ON FOOD AND NUTRITION

A very interesting and instructive booklet on food values and nutrition has been prepared, covering particularly the newer knowledge of vitamin and mineral metabolism.

A clear-cut discussion of origin and function of all the accepted vitamins is indulged in. Charts showing the relative content of vitamins, calcium, phosphorus, and total caloric value of the most common foods are presented.

Though the booklet is small in size, it forms a very handy reference work to the busy practitioner and should be kept on his desk. The book has been prepared by the R. B. Davis Company, the makers of Cocomalt, and may be secured without cost on request. Write to R. B. Davis Company, Dept. 000, Hoboken, N. J.

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#### DIPHThERIA OF THE PENIS

Maxwell P. Borovsky, Chicago (Journal A. M. A., April 20, 1935), states that only four cases of diphtheria of the penis have been reported in the literature occurring under 1 year of age. He believes that the patient he observed is the youngest one on record, 3 weeks. Information concerning two other authentic cases, one in the new-born period and one at 6 weeks of age, was received by personal communication. Two other cases are recalled by the Chicago health department authorities. In all five cases (three absolutely authentic, two reported from memory by Chicago health department authorities), circumcision was done by the same mohel. The author believes that transmission of the diphtheritic infection probably took place in his case during the change of dressings at home two days after the circumcision. The mask and rubber gloves worn during the operation would probably prevent the infection at that time.

15. Coblenz, W. W.: J. A. M. A. 99:125-127, July 9, 1932.

16. Coblenz, W. W.: J. A. M. A. 98:1082-1086, March 26, 1932.





PRESIDENT, 1935-36

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# THE JOURNAL

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### EDITORIAL

#### THE ANNUAL MEETING

The annual meeting held in Oklahoma City May 13, 14, 15, was remarkably well attended, especially considering the fact that it rained every day, which, of course, kept some at home. However, the registration of doctors and their wives amounted to 656. As you will see by the minutes in this issue, the House of Delegates and the Council were very busy; the work of these two bodies extended over many hours, but it is quite apparent that some good was accomplished.

It is unfortunate, indeed, that the President-Elect did not seem to be entirely satisfactory to the entire membership, but the Council, after careful deliberation, decided by a majority vote that he be re-

tained in office, and since this action it is sincerely hoped that the profession may be re-united on this subject and do everything possible to continue the excellent work that has been done under the leadership of our retiring President, Dr. LeRoy Long.

We wish to thank Mr. T. M. Beaird of the Oklahoma University for the operation of our motion picture program every morning. This was a much appreciated feature of the program.

We were all greatly disappointed on receiving a telegram from Dr. F. R. Teachnor of Kansas City, advising that on account of illness in his family he would be unable to attend.

Our guest speakers, Drs. Leland, Thorek and Davis presented excellent material and we were fortunate indeed to be able to obtain the services of these outstanding men of medicine.

We are informed that the golf tournament was a little wet (of course I mean on account of the rain), but the wet turf made the slow horses look good.

We wish to extend our thanks to Dr. Henry Turner and his Committee on Arrangements for making it possible for this large program to be presented in so orderly a manner. The scientific sections received every attention necessary to make their programs a success, and the entertainment features, as is always the case in Oklahoma City, were enjoyed by those in attendance.

After these comments, it should be apparent to those who could not attend that they missed an excellent meeting and should now begin to lay their plans to attend the meeting in Enid in 1936.

#### REPORT OF COMMITTEE ON NECROLOGY

*Mr. Chairman, Members of the Oklahoma State Medical Association:*

Since our last meeting together the grim reaper has taken from our midst a goodly number of our colleagues.

At this time we desire to pronounce their names as a public tribute from us, their erstwhile co-workers in the war against disease and death.

We desire to express to the world our appreciation of their great service to our people through years of labor and unrelenting toil.

We desire to express to the bereaved



families of these men our sincere sympathy for their loss, but we would add, also, that their lives have not been in vain, that their work will remain an encouragement and inspiration to those of us who remain. We pledge them our highest ideals of service as we wish them a God-speed to the reward of their labors.

Mr. Chairman, I move that a copy of these resolutions be spread upon the records of this association and one be sent to the family of each of our absent colleagues.

Following is a list of our deceased members since April 20, 1934:

Antle, H. C., Chickasha.  
Austin, C. W., Granite.  
Crews, John Watson, Atwood.  
Dawson, E. L., Chickasha.  
DeArman, Tom M., Miami.  
Evins, E. L., Wilburton.  
Freeman, I. S., Weatherford.  
Glenn, Joseph Orlando, Stroud.  
Lindsey, N. H., Pauls Valley.  
McClendon, J. W., Earlsboro.  
McFarland, H. B., Cleveland.  
McGregor, Frank H., Mangum.  
Melvin, J. L., Guthrie.  
Mitchell, P. E., Wetumka.  
Moyse, J. L., Okemah.  
Owen, B. A., Perry.  
Rector, Newton, Hennessey.  
Sackett, Lloyd Melville, Oklahoma City.  
Scott, Frank, Kingfisher.  
Standifer, John E., Elk City.  
Terrell, Ross F., Stigler.  
Thompson, Joseph M., Tahlequah.  
Wallace, Wm. J., Oklahoma City.  
Whiteacre, J. C., Memphis, Tenn.

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### **Editorial Notes—Personal and General**

DR. MARTHA BLEDSOE, Chickasha, is reported ill at her home.

DR. WILL PATTON FITE, Muskogee, was elected President of the Southern Society of Clinical Surgeons at its ninth meeting held in Baltimore in April.

DR. MARVIN E. STOUT and family, Oklahoma City, left May 10th to go abroad where Dr. Stout will attend the International Post-Graduate Assemblies.

DR. AND MRS. L. S. WILLOUR, McAlester, attended the meeting of the American Medical Association, Atlantic City in June. They visited in northeastern Pennsylvania and Philadelphia before going to Atlantic City.

DR. JAMES C. JOHNSTON, McAlester, has recently returned from Lexington, Ky., where he has been under the observation and treatment of Dr. Fred Rankin. His condition is somewhat improved. Owing to his illness Dr. Johnston was unable to appear on the general meeting program of the annual meeting, where he was to respond to the address of welcome.

### **TRANSACTIONS OF THE FORTY-THIRD ANNUAL SESSION OF THE OKLAHOMA STATE MEDICAL ASSOCIATION, OKLAHOMA CITY, MAY 13, 14, 15, 1935.**

#### **THE COUNCIL**

May 13, 1935, 1:30 P.M.

Meeting called to order by Dr. LeRoy Long, President.

Present: Doctors LeRoy Long, L. S. Willour, Louis H. Ritzhaupt, O. E. Templin, H. K. Speed, A. B. Chase, D. Long, W. A. Howard, Sam A. McKeel, and J. S. Fulton.

Minutes of the preceding meeting, held February 21, 1935, read by the Secretary and approved.

The President called for a report of the Auditing Committee, composed of Drs. Howard and McKeel. The report was read and unanimously adopted.

Dr. Chase then proposed that we consider recommendations in conformity to the recent crippled children's law for members of a standardizing committee for hospitals. The following recommendations were made by judicial districts:

District No. 1—M. M. DeArman, Miami.  
District No. 2—J. F. Park, McAlester.  
District No. 3—C. R. Rountree, Oklahoma City.  
District No. 4—C. W. Tedrowe, Woodward.  
District No. 5—W. M. Browning, Waurika.  
District No. 6—Thomas McElroy, Ponca City.  
District No. 7—Pat Fite, Muskogee.  
District No. 8—J. A. Walker, Shawnee.  
District No. 9—J. D. Osborn, Jr., Frederick.

The above list was unanimously adopted by the Council.

The matter of revamping the Standing and Special committees of the Association, with recommendations, was submitted by Dr. Ritzhaupt, and on motion duly seconded it was decided that no change should be made at this time.

The Council adjourned.

L. S. WILLOUR,  
Secretary-Treasurer-Editor.

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#### **HOUSE OF DELEGATES**

May 13, 1935, 7:30 P.M.

The meeting called to order by the President, Dr. LeRoy Long, and the report of the Credentials Committee, composed of Drs. Howard and McLain Rogers, was submitted. On motion of Dr. Pigford, seconded by Dr. White, the report was adopted.

On motion of Dr. Fulton, duly seconded, the reading of the minutes of the preceding meeting was dispensed with as they were published in the Journal of July, 1934.

The President then called for the reports of the committees. These having been published in the April and May issues of the Journal, it was decided that they be not read, except in the instances where recommendations were made. Relative to the Committee on the Study and Control of Cancer, a motion was made recommending to the Council that they appropriate \$250.00 for the work of this committee. The Committee on Post Graduate Medical Teaching recommended that \$2400.00 be appropriated for post graduate work. On motion of Dr. Ewing, seconded by Dr. Ferguson, it was recommended to the Council that they make these appropriations.

The report of the Committee on Public Policy and

Legislation, not having been completed for publication in the Journal, was submitted by Dr. Horace Reed and is as follows:

#### Report of the Committee on Public Policy and Legislation

Quoting from the by-laws of our association, this committee "shall consist of three members and the President and President-Elect. The President shall act as chairman of all committee meetings and shall represent the association in securing and enforcing legislation in the interest of public health and scientific medicine."

The House of Delegates, at the annual meeting in 1934, by resolutions, asked that two bills be introduced in the 1935 legislature, namely: a bill creating a basic science law, and a bill to set up a public health department.

The first meeting of the committee was held early in July, 1934. The Secretary-Editor of the association was present, by request. After much discussion a program was formulated, including such problems, which, in the opinion of the committee, should be presented for enactment. These problems were condensed for the purpose of submitting them to candidates for the legislature in the form of a questionnaire.

Accordingly, questionnaire blanks were prepared in the Secretary's office and sent to the several councillors with the request that each councillor contact the county societies in their respective districts and ask that each society secure from the candidates commitments on the questions submitted.

The result of this effort was, to say the least, intangible. We did find that, for the most part, candidates were reluctant to place their names on the dotted line. However, many gave verbal promises that, if elected, they would be governed in voting on medical questions by the advice of the home doctors. Subsequent developments demonstrated how poorly many of them remembered, or how much stronger was the advice they received from sources opposed to the wishes of the medical profession.

Following the general election, there was much talk about new legislation and many of the questions being raised were of interest to the medical profession. It soon developed that there was likely to be a difference of opinion among the members of the committee on some of these new matters, and there was no mandate from the House of Delegates by which the committee could be guided. This situation was called to the attention of President Long with the suggestion that it was desirable to have the Council called for the purpose of discussing and passing on such problems which were of a controversial nature.

The Council met with the committee in December in an all-day session. Several bills were considered at this meeting, on none of which was a definite agreement made. The Basic Science bill was an exception.

At this meeting the attention of the Council was directed to the situation at the medical school. A situation which had been growing over a period of some two or three years, but which had become acute during the last several months, namely: the making of the University Hospital a political patronage institution. This had resulted in a conflict of authority. Attention was directed also to a controversy over the manner of the selection of members of the faculty.

After some discussion the Council voted that it was its proper function to take an interest in the affairs

of the medical school, because the medical profession of the state was interested in having the school's high rating maintained. Two resolutions were presented and passed. One of these pertained to the selection of the members of the faculty. It declared that a member of the faculty should be selected because of ability as a teacher, availability and adaptability. The second referred to the divided authority already mentioned. It declared that there should be one responsible head answerable only to the President of the University, and, through the President, to the Board of Regents. This resolution was in keeping with the organic law which created the hospital and school, that the head should be the dean of the school, who is also the superintendent of the hospital.

In December another meeting of the Council was held, to which our committee was invited. At this meeting the Council set aside a sum of money, a part, or all of which was to be expended by the President, the President-Elect, and Secretary in providing a secretary for the committee and to meet such other expenses as would be found necessary in the proper functioning of the committee in procuring the legislation for which it had been given a mandate. The officers entrusted with this task very wisely selected Mr. L. W. Kibler. Mr. Kibler had for some years been in charge of the University Extension course in medicine until the course was killed in a manner as previously reported to the House of Delegates. Mr. Kibler, because of this experience, is acquainted with more doctors in the state than any other layman.

Mr. Kibler was requested to direct his efforts in seeking the passage of the basic science and public health measures and to keep the committee informed on such other bills as might be of interest to our profession. He kept closely in touch with our members in both branches of the legislature and in all respects performed faithful service, which we feel sure will not have been performed in vain. Mr. Kibler's report on his activities is herewith submitted as a part of this document. His report relates in detail what was done, more particularly in reference to the basic science bill.

Our delegates, on their return from the special session of the House of Delegates of the American Medical Association, held in February, requested that the Council be called to consider what, then, was thought to be a very urgent matter. Congress had under consideration the Social Security bill, known otherwise as the Wagner-Lewis bill. Passage of this bill was thought to be only a matter of short time. Following the passage of this bill the scheme was to introduce in each state legislature in session a sickness insurance measure, known as the Epstein bill. This bill makes such insurance compulsory in practically all employees and laborers whose incomes are less than sixty dollars per week. It further provides a scheme of voluntary insurance, which would, if accepted, include practically all others. But the Wagner-Lewis bill has not, as yet, been written into the law. The efforts put forth in the several states, following the Chicago meeting of the House of Delegates, no doubt has been to same extent effective.

Our Council took steps to aid your committee in carrying out the plan of the national organization. We feel it is proper that the profession of this state should know that one of our senators stands square-shouldered against this socialistic scheme, and states logical reasons why he so stands.

The Bureau of Medical Economics supplied the committee, on request, with literature and comments on the Epstein and Wagner bills, copies of which were placed in the hands of the secretary of each



county society. We must warn this House of Delegates of the grave problems we face in these changing times. There is scarcely a doubt that we will have to face a bitter fight in the near future if we are to avoid state medicine. Should we fail, it will be a sad day for the profession. It will be sadder still for the people of this fair land, when the profession becomes merely a cog in the wheel of a mighty political machine.

The final meeting of the whole committee was held about three weeks prior to the adjournment of the legislature. At this meeting it was found to be the consensus of opinion that the basic science bill could not be passed. It was certain that passage of it, carrying the emergency, was out of the question. We were informed by Senator Ritzhaupt that it could be brought up in a called session of the legislature, which, at that time, appeared to be certain, under the subject of public health. We were also informed that obstacles which were present in the regular session would not be so much in evidence in a special session.

We regret to note in Mr. Kibler's report that it is now believed the bill could not be properly introduced in a called session because of its "controversial nature".

#### The Medical School and Hospitals.

In February there was a session of the Board of Regents called, as was understood, for the purpose of looking into the affairs of the medical school and hospital and to take such steps as necessary to overcome the difficulties which had arisen in the administration of the hospital. While the regents were in session a committee of the senate, which, by resolution, had been created for the purpose of investigation of the medical school and hospitals, called on the Governor. On this committee's request the Governor asked the Board of Regents to do nothing about the matter until after the senate investigation had been completed. Accordingly, the board did nothing at that time.

At a meeting of our committee with the Council in November, Senator Ritzhaupt stated that the legislature would do something for the purpose of bringing about such changes in the medical school, which, in his opinion, were necessary. One of the things, which, in his opinion, was essential for the proper conduct of the affairs of these institutions was the service of a full time dean. Our committee interpreted resolutions which the Council passed on that occasion as meaning that the affairs of the medical school should be a responsibility of the President and Board of Regents of the University.

Nevertheless, the Senate Committee was created and held sessions at irregular intervals during the remainder of session of the legislature. Some of these hearings were in executive session, the dean of the school and superintendent of the hospital not being permitted to be present. Your chairman was informed that as at first constituted, the committee members were all friends of Mr. Bostic, the business manager of the hospital. Finding this to be the case, Senator Ritzhaupt asked that he be placed on the committee, also. The legislative committee took no active part in the investigation other than to remind Dr. Ritzhaupt that we would have to look to him to see that the faculty and dean were accorded a fair hearing. Your chairman did consult a former member of the Supreme Court whom he knew to be interested in the welfare of the medical school, and also to be a friend of principals of both sides of the controversy. He expressed the decided opinion that whatever else was developed in the investigation, the business manager of the University Hospital would be completely vindicated.

According to a summary of the final report of the investigation as stated in the press, the business manager was completely vindicated and his methods of conducting the affairs of the hospital approved. On the other hand, the dean and a large majority of the members of the faculty do not think they have had a fair deal and believe that no progress has been made, whatsoever, looking toward the correction of the difficulties which threaten the welfare of the school and hospitals.

Now that the waters have been muddied, something should be done—indeed, something must be done soon to clarify the situation. The faculty and dean look hopefully and trustingly to the President of the University and the Board of Regents, believing that the President and at least a majority of the board will soon take the necessary steps to bring order out of chaos. But aside from what the Board of Regents and President of the University do, the medical profession and the public are interested to know what the facts are in this controversy. To that end your committee recommend that this association make an investigation of its own. We suggest that the Council should be authorized to make such an investigation, or that the Council on Medical Education and Hospitals of the American Medical Association be requested to perform the task.

There were many obnoxious bills introduced in the legislature to which our attention was called by the Bureau of Legal Medicine of the American Medical Association. Your committee acknowledges with gratitude the valuable help and assistance which was freely given by the headquarters of the American Medical Association, particularly the Bureau of Legal Medicine and Legislation, in our efforts to defeat these bills. The Bureau of Medical Economics furnished us unstintingly with material with which we might prepare for the battle against sickness insurance as set up in the Epstein bill. We gratefully acknowledge this service, also.

There is evidence of lethargy among the members of our profession in some places concerning the problems which your committee had had to consider. This may be the fault of the committee, and we regret that this may be true. But by far and large, the profession rallied to our assistance whenever we indicated the need for help.

The Council and officers of the association accorded your committee, at all times, most helpful assistance and cooperation, for which we are profoundly grateful.

Respectfully submitted,

J. S. FULTON,  
HORACE REED,  
McLAIN ROGERS,

Committee on Legislation and Public Policy.

A motion was made by Dr. Ed White, Muskogee, that the report be not accepted. This motion was lost for want of a second.

On motion of Dr. Browne, seconded by Dr. Tempelin, the report was unanimously adopted.

After some discussion by Dr. Ritzhaupt as to his appointment on the senate committee investigating the medical school, the President appointed a Resolutions Committee composed of Drs. H. K. Speed, J. S. Fulton, and Louis Bagby.

Dr. A. W. White then asked the privilege of adding some conclusions to the report of his committee. The privilege was granted and the following was added:

"During the past year there has been an at-

tempt, apparent to the profession and laity alike, to bring about a solution of this problem by others than those favorable to or fully cognizant with medical problems, to the great embarrassment of medical education in this state. After careful study of our medical school under the administration of the present dean, this committee unqualifiedly endorses his management, and desires to compliment him in his efforts and ability to uphold the high standing of the school maintained under the preceding administration, and further to bespeak the whole-hearted endorsement by the State Medical Association of Dr. L. J. Moorman's administration of the medical department of the State University."

On motion of Dr. Horace Reed, seconded by Dr. Cook, this report, with amendment as presented by Dr. White, was adopted.

On invitation of the President, Dr. R. G. Leland, of Chicago, was asked to address the House of Delegates. His recommendations were relative to the trend toward health insurance and socialized medicine, and he warned the organized medical profession of Oklahoma that they have in mind some definite procedures relative to this matter so that when the time comes for revamping the style of practice that it may be under the control of the profession rather than the laity.

The address of Dr. Leland was well received by the House of Delegates.

The Secretary then presented a letter, over the signature of Dr. P. H. Anderson, Secretary of Caddo County Medical Society, recommending to the House of Delegates that Drs. Charles R. Hume, Anadarko, and Samuel Blair, Apache, be made honorary members of the association. On motion, duly seconded, these doctors were made honorary members by a unanimous vote of the House.

Dr. Cook, Tulsa, then presented the following motion:

"Since it is obvious that the aims, purposes, and ideas of the President-Elect of the Oklahoma State Medical Association are apparently totally at variance with the majority of the members of the association, we therefore move that the office of President-Elect be declared vacant."

This was seconded by numerous members of the House.

The chair then ruled that the motion was too general and that the member charged has a right to be charged in a way that he can answer, and stated that the motion would have to be changed in its form before it could be considered. Dr. Cook then presented the following motion:

"Since the aims and purposes of the President-Elect of the Oklahoma State Medical Association are apparently totally at variance with the majority of the association, we thereby move that his resignation be requested."

Motion by Dr. McLain Rogers that the House go into executive session, seconded by Dr. General Pinell, unanimously carried.

The President then stated that the House of Delegates was composed of the elected delegates from the component county societies, the Council and the officers of the association, which are the President, President-Elect and Secretary.

The House was then declared in executive session and Dr. Henry H. Turner was appointed Sergeant-at-Arms.

The President then ruled that the motion was too indefinite and could not be entertained.

Dr. Cook then presented the following motion:

"Requesting the resignation of the President-Elect on account of his unprofessional attitude toward the cults, osteopaths, etc."

The President then ruled that this was a question of ethics and the constitution and by-laws provided that a question of an ethical nature preferred to the House of Delegates shall be referred to the Council without discussion, and that the President-Elect is theoretically under arrest and will not be able to function as President-Elect until the Council decides.

Motion was made and seconded for adjournment. Carried.

L. S. WILLOUR,  
Secretary-Treasurer-Editor.

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### HOUSE OF DELEGATES May 14, 1935, 8:00 A.M.

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The meeting called to order by the President, Dr. LeRoy Long, and a roll of the house called by Dr. W. A. Howard. The President then appointed as tellers, Drs. Shippey, Wister; Hinson, Enid; Glismann, Okmulgee; McHenry, Oklahoma City, and asked for nominations for the office of President-elect.

Dr. Ferguson, Oklahoma City, placed in nomination Dr. George R. Osborn, Tulsa.

Dr. Fulton, Atoka, placed in nomination Dr. Sam McKeel, Ada. Nominations were closed and the House of Delegates proceeded to ballot.

During the absence of the tellers and while the ballot was counted the report of the Resolutions Committee was heard. Dr. Speed, Chairman of the Committee, reported on a resolution from Seminole County Medical Society relative to the fixing of fees for people of various incomes and stated that the Resolutions Committee wished to report adversely on it. On motion of Dr. Horace Reed, seconded by Dr. Cook, the report of this committee was adopted.

The tellers then reported on the ballot for President-elect and Dr. Osborn, having had a majority of votes, was declared by the President to be elected.

The President then called for nominations for Secretary-Treasurer-Editor. Dr. T. H. McCarley placed in nomination Dr. L. S. Willour, McAlester.

Dr. W. S. Larrabee, Tulsa, placed in nomination Dr. Shade D. Neely, Muskogee.

The tellers reported that a majority of votes had been cast for Dr. Willour. Dr. Collins then moved that the vote be unanimous. The President declared Dr. Willour to be elected Secretary-Treasurer-Editor.

The President then called for nominations for retiring Councillors. The following were nominated and unanimously elected:

District No. 2—H. K. Speed, Sayre.  
District No. 3—A. S. Risser, Blackwell.  
District No. 4—A. B. Chase, Oklahoma City.  
District No. 5—W. H. Livermore, Chickasha.  
District No. 6—W. A. Howard, Chelsea.

The President-elect was then presented to the House of Delegates and in a few well chosen remarks pledged his best efforts to the support of organized medicine in Oklahoma and remarked that he knew he was facing a very responsible position with hard work and trying decisions.

The President then announced that the Councilors



elected would not take office until January 1, 1936, and that meetings of the Council prior to that date would be made up of old Councilors.

The next order of business was the election of a delegate to the American Medical Association.

Dr. McLain Rogers, Clinton, was nominated and unanimously elected to succeed himself.

The next order of business was the selection of a meeting place for 1936.

Invitations were extended from Enid and Tulsa. On a rising vote, Enid received 71 votes and Tulsa 4. The President then declared Enid as the meeting place for 1936.

The Committee on Resolutions was then called upon and stated that they had considered the resolution presented by Dr. Ritzhaupt, relative to a proposed change of the constitution and by-laws relative to special and standing committees; they reported adversely on these recommendations. On motion of Dr. Templin, seconded by Dr. Howard, the report of the committee was adopted.

The following resolution was presented by the Resolutions Committee and on motion of Dr. Speed, seconded by Dr. Templin, was adopted:

"WHEREAS, medical education is primarily a scholastic matter and rightfully belongs in the department of education;

WHEREAS, certain political forces of the state have seen fit to take an interest in medical education in such a manner as to hinder its progress. This casts a reflection on the character of the work done by the medical school, and interferes with the progress of medical education, reflecting adversely on the profession as a whole;

THEREFORE BE IT RESOLVED, that we deplore the apparent destructive interest manifested by non-medical individuals and organizations, in the school of medicine;

BE IT FURTHER RESOLVED, that we whole-heartedly endorse the administration of Dean L. J. Moorman, who has continued the high standard previously maintained by Dean LeRoy Long, and compliment him on the progress the school has made in face of the adverse circumstances which prevail. And also that a copy of this resolution be sent to the Dean of the Oklahoma University Medical School, Dr. L. J. Moorman, and the President of Oklahoma University, Dr. W. B. Bizzell."

Discussion of legislative matters pertaining to organized medicine in Oklahoma by various members of the House of Delegates was then heard. Several motions were made and withdrawn.

At this time the matter of "lobbyist" for medical education was discussed by several members of the House of Delegates. Several motions were made, amended and withdrawn. Finally, the matter, by motion, was turned over to the Council for their further consideration and action.

The Resolutions Committee presented the following resolution relative to medical relief work, and on motion of the Chairman of the Resolutions Committee, duly seconded, it was adopted:

"WHEREAS, since July, 1933, authority from

the Federal Government in Rules and Regulations Nos. 3 and 7 has existed for the formulation and application of a State Medical Relief plan for the Emergency Relief Client;

WHEREAS, such a program for medical relief has never been officially approved for actual use; and

WHEREAS, the Oklahoma State Medical Association believes a more orderly method of care of those on the emergency relief rolls is desirable;

THEREFORE BE IT RESOLVED, that a special committee, of which the State Health Commissioner be a member, be appointed to present to and work with the State Emergency Relief Director on a medical relief plan appropriate for Oklahoma; and

BE IT FURTHER RESOLVED, that the Oklahoma State Medical Association, through its House of Delegates, hereby requests the Federal Relief Administration to approve the medical relief program suggested."

On motion, duly seconded, the House adjourned.

L. S. WILLOUR,

Secretary.

#### COUNCIL

May 14, 1935, 11:00 A.M.

The meeting called by the President, Dr. LeRoy Long.

Members present were: Drs. LeRoy Long, Champ-lin, Speed, McKeel, Templin, D. Long, Fulton, Howard, and Willour.

Meeting called to order by the President, who quoted the charge as brought against Dr. Ritzhaupt by Dr. W. Albert Cook, that of "unprofessional conduct towards the cults."

The President then heard Dr. Cook and advised him to introduce any evidence he might have to substantiate the charges. This evidence was introduced. Dr. Ritzhaupt then presented his side of the case, having produced one witness and his own testimony. At the conclusion of the testimony Dr. Ritzhaupt was excused from the Council meeting and they proceeded to vote, the President advising that those voting for conviction would vote "yes," those for acquittal would vote "no," and that a two-thirds vote would be required to substantiate the charges. The result of the ballot showed three for conviction and seven for acquittal.

The President then declared the ballot showed the charges were not substantiated. Dr. Ritzhaupt was then called to the Council meeting and so advised.

The matter of the investment of the \$9000.00 in bonds, held by the State Association, was then discussed and the Secretary-Treasurer-Editor was instructed to sell the callable bonds amounting to \$4000.00 and place the money on certificate of deposit—the other \$5000.00 to be left as invested.

The Council then adjourned.

L. S. WILLOUR,  
Secretary-Treasurer-Editor.

## NEWS OF THE WOMAN'S AUXILIARY

## Organized Groups and Their Presidents

El Reno .....	Mrs. Malcolm E. Phelps
Moreland .....	Mrs. T. B. Triplett
Norman .....	Mrs. Ben Cooley
Oklahoma City .....	Mrs. George Garrison
Shawnee .....	Mrs. T. D. Rowland
Tulsa .....	Mrs. H. Lee Farris

## Norman

Regular meetings are held in the different homes at the time that the husbands are having their meetings. Our programs consist of a report of the clinic, business and speaker.

As to health education, hygeia, and public relations, a doctor's wife is appointed for each grade school to see that each school receives its copy of Hygeia. Each school has one program during the year devoted to health and one of the doctors usually makes the talk at this program. In connection with the special clinics held at the grade schools by our doctors, members of our auxiliary kept weight charts which proved valuable.

Our one big project has been the free clinic held twice a month at one of the hospital buildings. The auxiliary members take turns in helping the doctors. We fill out cards, take weights, temperatures, etc.

We have had three social meetings: a tea for visiting doctors' wives of the Southern District meeting, a dinner for our husbands, and a covered dish supper for our members.

## Oklahoma City

The Oklahoma City Auxiliary is especially interested in its work for the Crippled Children's Hospital and the United Providence Association. They meet each month in the Y. W. C. A. building at 10:00 A.M. The committee rents and borrows sewing machines for this work. They report the following garments and books finished this year:

## For the Crippled Children's Hospital—

- 82 dresses;
- 104 undergarments;
- 27 scrapbooks.

## For the United Providence Association—

- 40 towels;
- 5 dozen napkins.

## Shawnee

The Shawnee Auxiliary was asked by the Parent-Teacher Association to furnish nine speakers to address assembled students in each of nine ward schools in April. These speakers talked on some subject of health for children.

The auxiliary has sent subscriptions to Hygeia to:

- Shawnee Senior High School;
- Carnegie Library;
- Tecumseh High School;
- State Industrial School for Girls.

## Tulsa

The auxiliary to the Tulsa County Medical Society has been thoroughly alive since the October meeting, which was in the form of a membership tea, and, after which, the roll mounted to 88 members. The average attendance at each luncheon meeting, held the first Tuesday of the month, is 30 to 35.

Officers include: President, Mrs. H. Lee Farris; President-elect, Mrs. Hugh C. Perry; Vice-President,

Mrs. J. Franklin Gorrell; Secretary, Mrs. Hugh Perry; Treasurer, Mrs. Samuel J. Bradfield; Historian, Mrs. J. Fred Bolton.

Following luncheon the program and business meeting consume the remainder of the session. These are held in the homes of various members, committees of four serving luncheon, for which those in attendance pay 25 cents, five cents of which goes toward a flower fund.

Programs include the following: November, Dr. L. H. Ritzhaupt, President of the State Medical Society, talked on "Laws Pertaining to Public Welfare and the Practice of Medicine in Oklahoma". December, sewing and making scrapbooks under direction of philanthropic committee. These were given to the Salvation Army maternity home and to children in the Tulsa hospitals. January, Mrs. A. H. Ruprecht, M.D., gave an address on "Dr. Banti's Contribution to Medical Science". February, hygeia program, with progress in medical science given by three members. March, County Health Unit talks were given by members of the League of Women Voters who have made a special study of the work. April, two papers were read on "Heroes in Medicine"—one on radium and one on yellow fever. At the May meeting, which was a picnic party, the subject for discussion was "Prominent Physicians of Today," in surgery and in medicine. The June meeting will be the annual election of officers, with the exception of president, who was elected in January.

A number of activities have been embraced in the year's work—health education, hygeia, public relations, medical history and philanthropic contributions. Now we are planning to attend the state medical meeting in May.

MRS. THOMAS H. DAVIS,

Publicity Chairman.

## THE TESTIS HORMONE

Carl R. Moore, Chicago (Journal A. M. A., April 20, 1935), discusses the biologic functions of utility that the testicle exercises in the organism. He presents some of the general phases and particular details of the testis hormone and discusses some of the principles and possibilities of its clinical application. The experimental animal must be depended on for presenting the various aspects, since knowledge of the manifestations of hormone deficiencies in man, of methods of detecting the presence or absence of the hormone, or of its utility in the species is so limited as to be of little value. It is apparent that the question of the clinical value of testis hormone is by no means settled. For attaining dependable results the problem must be considered from the broad point of view of social background and biologic principles. Real advancement must rest on honest critical work rather than on poorly conceived sporadic experimentation with hastily assumed results and unsubstantial claims. The principal sources of testis hormone are the testicles of large mammals and human urine. Testis hormone is obtained from the lipid fraction and has been sufficiently purified to yield crystals having a high potency. It appears chemically to be a ketone-alcohol; the only known method of detecting its presence consists in reactions produced in suitable animals. It is secreted continuously, or periodically, in different animals, and secretion is largely under the control of the pituitary gland. It is uncertain whether more than one hormone is secreted by the testis. Its clinical use is questionable; its primary function is the control of the accessory reproductive organs; it is not a testicular stimulant.



# ABSTRACTS «» REVIEWS «» COMMENTS AND CORRESPONDENCE

## EYE, EAR, NOSE and THROAT

Edited by Marvin D. Henley, M.D.  
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Entopic Phenomena Associated With the Retina. C. R. Marshall, London. *The British Journal of Ophthalmology*, April, 1935.

The entopic phenomena induced by structures in the retina and adjoining chorio-capillaris are treated of extensively in this detailed and instructive communication. The entopic phenomena induced by structures anterior to the retina are ignored. The great bulk of the literature on this subject is briefly reviewed and a comprehensive recapitulation is given. The views of different investigators are given as to the part that the chorio-capillary circulation plays in producing these entopic phenomena.

The author assumes that the most distal part of the layer of rods and cones, namely, the outer segment, is the receptive structure for visible form, and that it is theoretically possible for this part of the rods and cones to see in some measure the shadows of all structures on or near the optic axis in front of it; and that, since the distal part of the rods and foveal cones shows no distinct asymmetry of structure, there seems to be no good reason why this receptive part of the retina should not see objects behind it, if these are sufficiently illuminated for the purpose. The rods and the foveal cones possess the power of looking backwards and scrutinizing carefully the retinal pigment and the chorio-capillary circulation.

When the retinal pigment particles were observed alone a greater magnification was necessary than when seen in conjunction with the chorio-capillaris. The pigment granules looked rod-like and were not regularly distributed over the visual field. The one is a picture of still life—minute black rods variously and unsymmetrically arranged on a buff-coloured billowy surface; the other is a foliaceous pattern of a restless surging sea. The pigment picture is rarely seen.

The difficulties of observation and different appearances are attributed to varying positions of the outer segment, possibly caused by greater or less relaxation of the myoid of the inner segment, of the rods and cones. The visibility of the chorio-capillaris and the retinal pigment makes it possible to more accurately determine the seat of energy transformation resulting in vision. By magnification under the microscope and projection the author places the plane of energy transformation in the outer segment of the foveal cones.

The origin of the luminous darting points has been much debated. The author believes the points must be caused by red corpuscles, refracting and under some conditions possibly reflecting light on to the layer of rods and cones. They are too numerous to be white corpuscles. It has been said that the red corpuscles being biconcave discs could not refract light rays on to the rods and cones, but this supposition ignores the position which red corpuscles may assume in a capillary channel.

The self-light of the eye is probably associated with energy emanating from the pigment particles of the retina and from the retro-retinal circulation. Most unexplained entopic appearances associated with the retina, except those which may be due to or influenced by the mentality, especially the powers of pictorial conception, of the individual, are explained as out-of-focus presentations of normal structures in or adjoining the retina. Extensive references accompany the communication.

Allergy and Its Relationship to Sinusitis and Allied Nasal Conditions. Abram I. Cohen, M.D., Boston. *Archives of Otolaryngology*, March, 1935.

Lack of permanent relief in treating patients suffering from stenosis of the nose, sneezing and watery discharge and poor management on the part of the allergist caused the author to do his own skin testing, since he believes that all such conditions have an allergic basis.

The usual method of treatment—shrinkage, cauterization and surgery—is ordinarily a temporary remedy. The skin testing done by the allergist was considered unsatisfactory because in the majority of cases enough tests were not made; with too little concern given to the testing of foods in connection with abnormal nose and throat conditions, and in doing the scratch test traumatization of the skin occurred, which tended to frighten the patients, particularly the children.

Working with Dr. J. R. Taylor the author brought into practical use the pressure puncture test which is made with the Taylor protein knife. This procedure is given in detail and the superiority of this method over the intradermal method is discussed.

Reactions must be read closely if good results are secured. If some doubtful positive reactions are found it is better to remove from the diet all foods causing either a positive or a questionably positive reaction.

In a series of 175 cases the author found that foods caused the majority of abnormal nose and throat conditions. Noticeable improvement was reported by the patients almost immediately after the positive foods were omitted.

A compilation of results of 100 patients with hyperesthetic rhinitis showed that failure occurred in only 2%.

The proper diet in conjunction with inoculation with extracts of pollen which caused a positive reaction, considerably lessens the number of hay fever attacks.

Influenzal Labyrinthitis Without Suppurative Otitis Media. A. Brownlie Smith, Edinburgh. *The Journal of Laryngology and Otology*, April, 1935.

In chronic middle ear infections labyrinthitis is not an uncommon complication. In purulent meningitis, labyrinthitis complicating is rather uncommon. Meningitic neuro-labyrinthitis frequently follows epidemic cerebrospinal meningitis. Literature shows one case of labyrinthitis following measles and pneumonia in

which the labyrinth was infected by spread along the eighth nerve from the meninges. Influenza not infrequently causes an impairment of the nerve of hearing, due to a toxic neuritis or a localized meningitis. Nager describes a case of true labyrinthitis following a meningitis of influenzal origin. Comparatively speaking influenzal labyrinthitis is quite rare.

The essayist reports a case of a child of five months of age, who for the previous six days prior to entrance to the hospital had not been well. The chief complaint was a cough and fever. The base of the right lung after a few days showed consolidation and on puncture of the pleural sac a quantity of yellow pus was withdrawn. Spinal puncture was done after signs of meningitis became evident and yielded 20 cm. of turbid fluid. The child died a short time later.

Findings at post mortem were acute purulent leptomeningitis, empyema of the right pleural sac, and a partly resolved broncho-pneumonia. Pfeiffer's B. influenza was present in both the cerebrospinal fluid and the right pleural sac. The left temporal bone was studied. The semi-circular canals contained a hemorrhagic purulent exudate. There was present a definite labyrinthitis. There was an inflammation of the eighth nerve. It was believed that this was a case of influenzal meningitis with a subsequent labyrinthitis spreading outwards along the course of the eighth nerve. Two other paths of infection would be possible, from the meninges along the acoustic nerve or by the aqueduct of the cochlea, and by the blood stream. The possibility of the infection entering by way of the middle ear was ruled out since all previous middle ear history was negative and the post mortem showed no perforation of the tympanic membrane, no pus present in the tympanum, and no catarrh of the tympanic epithelium. Osler states that the severe and persistent vertigo which many times follows influenza is probably due to involvement of the labyrinth.

The essayist thinks that this condition is probably not as rare as it would at first appear. The majority of influenza patients do not enter the hospital and consequently post mortems are generally missed. If the patients were more commonly hospitalized, where the post mortems could be more easily obtained, and a greater number of specimens procured for examination, the statistical incidence of this disease would more than likely be greatly increased. Microphotographs of the horizontal section of the middle ear, horizontal section of the superior semi-circular canal, horizontal section of the cochlea, and a horizontal section of the internal acoustic meatus accompany the article.

**External Deformities Corrected and Removal of Existing Intranasal Obstruction Advantageously Accomplished at the Same Operation.** Lee Cohen, M.D., Baltimore. *Annals of Otology, Rhinology and Laryngology*, March, 1935.

It is not an uncommon event for the patient who needs plastic surgery of the nose to also need intranasal operative work in order to give the patient normal breathing space. It is generally agreed by men who do this that the external work should not be done until a matter of several weeks after the internal nasal obstructions are corrected. This was the procedure that the essayist followed for many years and found that the objection offered by the patient was the increased expense of the hospitalization for two separate and distinct operations. Many times the patient would urge the operator to correct the ex-

ternal deformity and to leave the internal obstruction alone. Invariably when the operator was persuaded to follow this outline the patient later returned asking for relief from the obstructed breathing.

The essayist for the past three years has been doing both operations at one sitting with satisfactory results both to himself and the patient. The exception is that when a rib graft is being inserted for the correction of a saddle back deformity the two operations are preferable in order to lessen the chances of post operative infection. The presence of a purulent sinusitis rules out any plastic surgery until this condition is entirely eliminated.

Dr. Cohen is not as conservative as many operators in regard to the removal of the middle turbinates and the obstructive portions of the inferior turbinates. He thinks that the desired result is many times not obtained by other operators because of this conservatism. When he deems it necessary he removes the middle turbinates entirely or portions of the inferior turbinates, depending upon the condition found. He cautions against the removal of too much cartilage in patients 16 to 18 years of age, where both sides of the vestibule are completely blocked following traumatization. Removal of an amount of cartilage from each side sufficient to allow a comfortable breathing space is the proper procedure. This must be carried out or the patient will show marked retardation in his school work and other activities as well as his general health and development. In the dual operation correcting the external as well as the internal deformity, he prefers doing his so-called modified submucous resection, the technic of which he gives in detail.

The flail septum, which is the result of the removal of practically all the bony septum in attempting to obtain a straight septum, is discussed and means and methods suggested to prevent its occurrence. In his operative work in the nose he retains as much as possible of the vomer bone for support of the membranes, even if it is severed from its attachments. Four cases are reported. Each case is described and the technic of the operation in each case. Photographs of the individual before and after operation are reproduced.

## ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.  
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**Characteristics of the Synovial Fluid in Various Types of Arthritis. Study of Ninety Cases.** Chester S. Keefer, Walter K. Myers and Wm. F. Holmes, Jr. *Arch. Int. Med.*, LIV, 872, 1934.

One hundred twenty samples of synovial fluid from ninety patients with various types of arthritis were studied to determine the diagnostic significance of the various biological and chemical characteristics of the fluid.

An increase in the amount of synovial fluid may be the result of transudation or exudation resulting from inflammation. Transudates into the cavities of the joints are observed under the same circumstances as they appear in other serous sacs—that is, with increased venous pressure, decrease of plasma protein, or obstruction to lymphatic drainage.

In acute inflammatory lesions of the synovial membrane, the total cell count was increased. When the fluids were infected, the cells were commonly all polymorphonuclear. When they were not infected,



the lymphocytes, monocytes, and clasmalocytes were relatively increased. These changes are similar to those found in other effusions, infected and non-infected, of the serous sacs. In the case of tuberculous arthritis, the polymorphonuclear cells may not predominate in all cases. Guinea pig inoculation is useful in the diagnosis of tuberculous arthritis.

The gonococcic complement fixation test was positive in 74 per cent of the synovial fluids from patients with gonococcic arthritis. The test was usually in agreement with that of the blood. In view of the negative results in other types of arthritis and the rare occurrence of falsely positive reactions, the test was of assistance in the diagnosis of gonococcic arthritis.

The Wassermann reaction of the synovial fluid was positive in two cases of syphilitic arthritis. In these cases it is usually positive in both the blood and the synovial fluid; whereas, in the cases of Charcot joints in *tabes dorsalis*, the reaction may be positive in the blood and negative in the synovial fluid.

The total protein content was increased above normal in both the infected and the non-infected fluids from patients with gonococcic arthritis, rheumatoid arthritis, acute rheumatic fever, and tuberculous arthritis and in the miscellaneous group of cases. The non-protein nitrogen varied with the value in the blood and was of no diagnostic significance. The sugar content varied with the presence of organisms, the number of cells, and the level of the sugar in the blood. A low sugar content did not always mean an infected fluid, but could occur as well when the number of cells was increased.

#### Tuberculosis of the Neck of the Femur. Chir. Narz. Ruchu. VII, 157, 1934. W. Dega.

The situation of a tuberculous focus in the proximity of a joint is a grave menace to the latter's integrity. Hence, the majority of surgeons are inclined to treat juxta-articular tuberculosis radically. Among the various locations of juxta-articular tuberculosis, the femoral joint should be given special consideration on account of the topographic peculiarities.

A tuberculous focus of the neck of the femur may be classified according to one of the following types:

1. Central—that is, situated in the spongiosa of the neck—consisting of one or several cavities filled with a necrotic deposit. It is often diffuse in the early stage, and circumscribed in the more advanced stage.
2. Peripheral, usually situated on the upper aspect of the neck, near the head of the femur.
3. Close to the greater trochanter.
4. Occupying the whole neck of the femur.

Of 216 cases of tuberculosis of the hip joint treated by Dega in the Orthopaedic Institute of Poznan (Poland), there were thirteen cases of tuberculosis of the femoral neck (seven occurring in girls and six in boys), that is, 6 per cent of the total. The age of the patients ranged from seven months to five and one-half years.

In seven cases, the tuberculous focus was situated in the lower median section of the neck; in five cases, in the center of the neck; and in one case, the whole neck, including the greater trochanter, appeared to be involved, whereby the condition resembled that of *spina ventosa*.

The following clinical signs were observed: In the beginning there was frequently a circumscribed pain in the hip or the knee, later followed by limitation of motion in the hip joint, as regards adduction and rotation. The extent of the articular disability some-

times contrasted with that of the roentgenographic findings.

Ten cases were treated conservatively by immobilization, first with plaster-of-Paris casts and later by orthopaedic apparatus, with the following results: In one instance (central focus), transient recovery took place with a relapse after four years and subsequent coxitis. In another instance (central focus), there has been no recurrence after two and a half years. In the remaining cases, the results were negative, that is, ending in coxitis or death from meningitis.

Three cases were treated surgically. The operation consisted of complete removal of the tuberculous foci through the postero-external intratrochanteric approach, whereby the synovial joint capsule remained intact. The joint was then immobilized until the cavity in the femoral neck became filled up with bony substance; the period of immobilization varied from several months to over a year. The end results were negative in two cases of peripheral location of the tuberculous focus—one patient suffered a relapse after six months, the other, after twelve months. Coxitis developed in both instances. In the third case (central focus with perforation of the epiphyseal cartilage of the femoral head), there was recovery with undisturbed motion of the hip five years after the operation.

It appears that the results of the treatment depend less on the method used than on the patient's resistance, early diagnosis, and social conditions (housing hygiene, possibility of superinfection). However, there is evidence that surgical intervention is able to bring about a good result, which greatly shortens the time of treatment.

### SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
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A Glance at the Indications for Auto-hemotherapy. Its Utilisation as a Vehicle for Medicaments (*Aperçu sur les Indications de l'Auto-hemotherapie. Son Utilisation Comme Vehicule Medicamenteux.*) By Elie Achitouv, of Stamboul. *La Presse Medicale*, December 15, 1934.

The article is divided into two parts. In the first part the utilisation and the importance of auto-hemotherapy are discussed. In the second part there is a discussion of auto-hemotherapy as a vehicle for medicaments.

Having observed that there was a favorable reaction to auto-hemotherapy in connection with various lesions of the skin, the author reasoned that there might be the same favorable reaction in connection with diseases of the mucous membrane. Acting upon that hypothesis, the method was tried in hyperchlorhydria, muco membranous enteritis, conjunctivitis, rhinitis, pharyngitis, bronchitis, leucorrhea, etc.

The author reports that in a number of cases of hyperchlorhydria there was rapid and durable improvement. In these cases there was no other treatment with the exception of management of the diet. Following the lead of other authors, as well as acting upon the conclusion cited above, auto-hemotherapy was employed in ulcer of the stomach where it appeared to be of service.

Recalling that in many cases of pellagra there is characteristic irritation of the mucous membrane, auto-hemotherapy has been employed in pellagra with considerable evidence of good results. The method is

uniformly employed by the author in the treatment of herpes zoster.

Having observed that in certain individuals there are unpleasant symptoms after the hypodermatic injection of suprarenalin extracts, the author was led to withdraw blood from a vein of the patient and to mix the medicament—that is, the suprarenal preparation—with it. He reports that the disagreeable symptoms, such as nervousness, palpitation, lividity, cyanosis of the lips are controlled in this way. It is his theory that, being mixed with the blood, the absorption is not so abrupt, and in that way the patient has an opportunity to adjust himself to the effect of the medicament.

He believes that he has been able to circumvent the occurrence of a hypoglycemia after the hypodermatic employment of insulin by mixing it with the blood that has formerly been withdrawn from the vein of the patient. In addition, he believes that it not only prevents the hypoglycemia, but that it assists in keeping the patient under the constant and moderate influence of the insulin.

Several other examples of conditions in which it appears that it is beneficial to mix the medicament employed with blood drawn from a vein of the patient are mentioned, among them being the prevention of the Herxheimer reaction after the administration of anti-syphilitic remedies.

—LeRoy Long.

**Riedel's Struma.** By B. B. Benson, M.D. *American Journal of Surgery*, February, 1935, page 361.

This type of thyroid gland disease was first described by Riedel in 1896. Because of its woody or iron hard consistency, its fibrous degeneration and chronic inflammatory nature, it has been designated by various names by different authors, such as Riedel's disease, Riedel's thyroiditis, woody thyroiditis, iron hard thyroid, lingeous thyroiditis, chronic productive thyroiditis, fibrous degeneration, primary chronic inflammation, canceriform inflammation, infiltrating fibroma and benign granuloma, all fairly descriptive of the condition of the thyroid gland as described by Riedel.

In 1912 Hashimoto described four similar cases which he thought were not to be identified with Riedel's iron hard struma and termed the condition struma lymphomatosa. Ewing, as well as Shaw and Smith and many of the recent writers believe that Hashimoto and Riedel have described the early and late stages of the same pathological condition, while Graham in 1931 grouped the cases reported into separate classes, as Riedel's struma and Hashimoto's struma, considering that the former more nearly approaches true inflammation than the latter. Most of the writers who have either written articles or reported cases, with the exception of Hashimoto and Graham, have not chosen to separate the two types of strumas, Riedel's and Hashimoto's, but have considered them to be different stages of development of the same disease.

Almost every one familiar with thyroid disease and the pathologists have been impressed by the woody or iron hard consistency of the glands, and symptoms of constriction out of proportion to the size of the lesion.

The condition is more frequently in women than men, about three to one, and occurs principally between the ages of thirty and fifty years.

The symptoms are the result of actual pressure on or constriction of the trachea, esophagus, recurrent laryngeal nerve, and adjacent tissues of the neck. They are not in proportion to the size of the tumor

but to the hardness of the mass and more particularly to the perithyroiditis and extracapsular fibrous invasion of surrounding tissues. The gland may be tender on palpation and even painful in some cases. The basal metabolism usually approaches normal. The loss of weight is usually moderate. There is usually no rise in temperature. There may be a slight increase in white blood cell count. The Wassermann test is usually negative.

Next to its stony hardness, the adherence to overlying muscles and adjacent structures, such as the trachea, lack of mobility and absence of lymph-node involvement are its most characteristic features. This immobility leads to the erroneous diagnosis of malignancy.

The diagnostic features are the stony hard tumor, the immobility, the dyspnea from tracheal compression as shown by x-ray in the advanced cases out of proportion to the size of the tumor, the lack of toxic symptoms and of cervical node involvement.

The treatment of choice is surgical, in view of the fact that this is a progressive lesion, bringing on death by asphyxiation. Complete thyroidectomy should be done, especially when both lobes are involved, and the case is operable. If not, at least a wedge-shaped piece should be removed from the isthmus to relieve the pressure over the trachea.

The results of x-ray treatment have not been noteworthy and the data relative to such treatment are meager.

The author recommends rectal anesthesia in operating upon these patients. He uses avertin or oil-ether colonic anesthesia as developed by Gwathmey.

The pathology is that of a replacement fibrosis, of an earlier lymphoid cell invasion.

While the mortality was rather high in the first cases reported and many cases were abandoned as inoperable, or a tracheotomy only was performed, it is noticeable in the later cases that the mortality has diminished to a practically negligible figure.

No doubt there are many cases that are never reported, but it is of sufficient rarity and of sufficient interest to report the occasional case which one sees so that the ultimate classification may be aided.

I have, in a previous abstract in this column, reported one of my own cases which was classified as struma lymphomatosa of Hashimoto. Dr. Graham studied slides from the tissue removed in my case. Heretofore I have been inclined to follow Graham in his attempt to separate the two types of strumas. However, it may be that Ewing and others are correct in their assumption that the struma of Riedel and Hashimoto are different stages of development of the same disease.

—LeRoy D. Long.

**Permanent Results of Irradiation for Inoperable Cancer.** Joseph Colt Bloodgood, M.D., Baltimore, Md. *American Journal of Cancer*, May, 1935, page 490.

Dr. Bloodgood presents the history of a cancer of the breast which he first saw in June, 1932, and referred for irradiation, because of the advanced nature of the disease. Subsequently, at operation, he removed the disease in the chest wall by such an extensive necessary dissection that the operation was interrupted before accomplishing complete axillary dissection. The patient recovered slowly from this operation and some weeks later skin grafting was performed. At the time of operation no glands could be palpated in the axilla. There was no microscopic proof, naturally, that the axillary glands were involved, but it was difficult to imagine a cancer of



this extent in the breast and apparently infiltrating outside the breast, not having caused metastases to the axillary glands.

On report from the patient's doctor in December, 1934 (2½ years), there was no evidence of involvement of the glands of the axilla which were not removed and no evidence of local recurrence in the huge skin grafted area which followed the excision of the disease of the chest wall, fully three months after irradiation was completed.

They have the microscopic proof of the disease because in the breast there was fully developed scirrhous cancer, found in the inflammatory tissue, left after the irradiation. There were small areas here and there of cancer, though there is no question that most of the cancerous tissue could not be recognized under the microscope after this period of irradiation.

Dr. Bloodgood then remarks upon irradiation as a preoperative treatment in operable cancer of the breast. The following is quoted:

"At the present time, the opinion of the majority of my surgeon colleagues favor the complete operation at once on all clinically malignant, but operable, breast tumors. I am confident that the experience of Mr. Keynes and his colleagues in London and of Dr. Henry, and more recently of Drs. Kelly and Burnam and their associates, agrees with mine; that there is no danger whatever in giving preoperative irradiation to clinically operable breast cancers, and my personal experience with cases referred to Dr. Burnam and his associates teaches me that there is no danger in delaying the complete operation from two to three months devoted to a thorough course of irradiation. I have some cases now in which, although the cancer cell is still to be stained in the microscopic sections, there is no growth, and in most of these early cases there is no evidence of metastasis to the axilla. In one case in which there was microscopic evidence of metastasis there was no growth in the tissue culture. As to just how long preoperative irradiation should be continued in operable, but clinically malignant tumors of the female breast, there is considerable disagreement. The majority of operators are willing to give irradiation a trial in hopeless and inoperable cases, but apparently as yet they wish to rush to surgery in all operable cases, whether the disease is clinically malignant, or found to be malignant at the exploratory incision.

"However, there is an increasing number of operators, radiotherapeutists and pathologists who are beginning to feel that the moment preoperative irradiation begins the danger of delay is averted, that is, that there is ample time to give as much irradiation as may be necessary.

"I have moved very cautiously in the past two and one-half years, and have worked largely with Dr. Kelly, Dr. Burnam and their associates. This allowed the comparison with radium emanations in large doses and the heavy deep x-ray therapy. There is still considerable difference of opinion among the most experienced radiotherapeutists, and apparently it is a good plan to be able to compare the different methods. At the present moment, in my observation, it is the experience and training of the radiotherapeutists that counts most, and I have been able to compare the results of many clinics in England, Canada and in the United States. I hope the readers of this article will readily understand me when I make the statement, which is a repetition of what has already been said in this paper, that: If there is no internal metastasis, there is no danger of its taking place or of further involvement of the axillary glands after properly performed preoperative irradiation. At pres-

ent, throughout the entire world, the modernly and efficiently trained operator fears and wishes to avoid any delay the moment the diagnosis of cancer of the breast has been made, clinically or at biopsy. Apparently we have enough evidence to conclude that this is based on fear and not on facts, and on the most careful study of my cases up to date, my entire evidence confirms the statement that there is no danger from further delay if the time is taken for proper preoperative irradiation."

It is well to quote the following paragraph concerning the usual practice in Dr. Bloodgood's group:

"Recently it has become my rule to excise all clinically benign or doubtful tumors—irrespective of their microscopic appearance, unless they are distinctly benign, to irradiate them while submitting the sections to all the members of my clinic, and in all cases in which we diagnosed distinct cancer, irradiation is finished before the complete operation is performed. And this is our advice when completely excised tu-

"When the section is distinctly malignant, we advise immediate irradiation over the axilla to be followed over the breast in all doubtful and malignant tumors. When the section is distinctly benign, we advise that irradiation be stopped.

"When the section is distinctly malignant, we advise to finish the course of irradiation and then perform the complete operation.

"Today, too many complete operations are performed for cancer of the breast after excision of the lump and microscopic study with the conclusion that it is malignant or doubtful. I am convinced that we have sufficient evidence to demonstrate that closure of the wound after the excision of a tumor of the breast and thorough preoperative irradiation promise the patient more, even when the axillary glands are involved, than the immediate complete operation without irradiation. There is sufficient difference of opinion, however, and both procedures will be followed in various proportions by the different operators of the civilized world. Those who give preoperative irradiation, with and without preliminary biopsy, are at present in the minority, but their number is gradually increasing, and those who are proceeding with immediate operation, because of the evidence of a distinctly malignant tumor, although still in a majority, are diminishing in numbers."

Dr. Bloodgood closes his article with the remonstrance that the most important thing, however, is getting women to be examined within two weeks after the first discovery of the lump or of any other sign or symptom of a breast lesion. He points out that only in this way will the early curable cases be discovered and treatment instituted.

Comment: The report of the inoperable breast carcinoma which was treated by irradiation and subsequent operation is extremely interesting because of the excellent result.

The question of preoperative irradiation of breast cancer is now a much debated one and is far from being entirely settled. The views of a man of Dr. Bloodgood's experience and conservatism are therefore of considerable importance, especially when he says, "If there is no internal metastasis, there is no danger of its taking place or of further involvement of the axillary glands after properly performed preoperative irradiation." That properly performed preoperative irradiation is of value, there can be little question. Whether or not you should place such explicit faith in considerable delay before operation, remains a definite question.

—Wendell Long.

**Chronic Cystic Mastitis. A Further Report on the Nature of the Process.** J. Stewart Rodman, M.D., Philadelphia, Pa. *The American Journal of Surgery*, May, 1935, page 452.

Dr. Rodman discusses briefly the physiological features of the breast tissue behavior, especially relative to active phases in the female upon the basis of ovarian function.

Consequently, "The same breast tissue in the same patient is apt to present a distinctly different picture in either the premenstrual, postmenstrual or resting phase, due of course to the astonishing aggressions and regressions of both epithelial and fibrous elements." He continues this discussion of normal physiology, ascribing the rest stage as probably from the fifth to the fifteenth day after the last menses.

He also discusses the possibility of the variations from the normal in addition to chronic cystic mastitis, such as adenoma, adenofibroma, fibroadenoma and papillary cystadenoma, but in reality the same process with variations of the "theme".

He discusses briefly the misconceptions of the nature of chronic cystic mastitis, particularly in regard to its inflammatory nature and in its precancerous characteristics. He points out that this disease is not inflammatory and though a great many cases are associated with malignancy, it is not necessarily a precancerous lesion.

After a very interesting discussion of the pathology of the various breast diseases and their possible interrelation, he considers "A working rule in the management of that group of benign breast lesions now grouped under the pathological names of adenofibroma, papillary cystadenoma and chronic cystic mastitis."

1. All agree that the problem is simple as far as adenofibroma are concerned: Local excision.

2. In papillary cystadenomas, which represents further advance in epithelial activity in women over 35, a simple amputation of the gland.

3. "In chronic cystic mastitis we can divide our cases in women under thirty-five and those beyond that age."

(a) "If under thirty-five and the lump or lumps change when seen on several occasions planned to fit into the premenstrual, menstrual and resting phases, becoming smaller in the resting phase or disappearing altogether, it will of course not be necessary to do anything surgically. If under thirty-five and the lump does not appreciably change in these menstrual phases after observation for at least two months then the lump should be removed for microscopic study. If benign that will suffice."

(b) "If over thirty-five and the lump or lumps do not change appreciably after two months' observation simple amputation, having on hand a well-trained pathologist to make a frozen section of the most suspicious area. Every now and then even this precaution will not suffice as an experience within the last six months proved. In this case of a woman of thirty-eight a simple amputation was done because of the widespread nature of the disease. A frozen section from the most suspicious area showed chronic cystic mastitis but paraffin sections of a small area not at first even found on sectioning the breast, showed undoubted early carcinoma."

The following are the conclusions drawn:

1. "Chronic cystic mastitis (abnormal involution, mastopathy, mazoplasia, chronic desquamative hyperplasia, etc.) is an exaggeration of the normal physio-

logical changes in breast tissue occurring from puberty to the menopause (55 per cent).

2. "It is often associated with ovarian dysfunction and probably initiated by ovarian hormones.

3. "It is often associated with such benign lesions as adenofibroma and papillary cystadenoma which are probably localized reactions of the breast tissue to the same stimulus as causes the generalized reaction of chronic cystic mastitis (27 per cent).

4. "It is associated with carcinoma in from 15 to 20 per cent of the cases (15.5 per cent).

5. "It is essential that the normal changes in the various menstrual phases be kept in mind in handling each case."

**Comment:** The brief discussion of the physiology and pathology of these benign breast lesions is entirely sound. The admitted close relations between such breast pathology and ovarian disease is so definite that we do not feel it is justifiable to give an opinion as to care until a thorough pelvic examination has been made. Not infrequently many mild breast symptoms will disappear upon the correction of pelvic pathology.

The working rule laid down by Dr. Rodman is a very good one for its purpose, always remembering that working rules must have individual application.

—Wendell Long.

**The Treatment of Uterine Bleeding with Snake Venom (Ancistrodon Piscivorus).** By Samuel M. Peck and Morris A. Goldberger. *The American Journal of Obstetrics and Gynecology*, June 1933, pg. 877.

Successful attempts at nonspecific control of experimental purpura in animals led Peck to treat patients suffering from hemorrhagic diatheses with snake venom. The observation was made that in women with thrombocytopenic purpura, the prolonged menstrual flow was checked. This in turn led him to suggest that patients with prolonged uterine bleeding of various types might be treated with this therapeutic agent. The cases reported in this communication were chosen for snake venom injections because of the failure of other forms of therapy during long periods of observation.

Twelve cases of functional uterine bleeding who were treated with mocassin venom are reported. The authors recognize the fact that the period of observation was too short to draw any final conclusions about the permanence of results, which were strikingly good up until the time of publication. They feel that the therapeutic effects were satisfactory enough to warrant clinical trial of venom therapy in cases of this type.

With the exception of one case of a thirty-three-year-old married woman with a history of irregular and profuse uterine bleeding for three years and with a fixed retroversion of the uterus and macrocystic ovaries the results were very good, especially considering the fact that these patients were chosen because of the persistence of symptoms after all other forms of therapy had failed.

The details of the method of administration are given. Small dosages were used intradermally for from three to six months, given twice weekly.

—Wendell Long.

**The Therapeutic Value of Antuitrin-S in Menometrorrhagia.** By Samuel H. Geist and Frank Spielman, N. Y. *American Journal of Obstetrics and Gynecology*, April, 1935, Page 518.

In discussing a paper by E. Novak at the American Gynecological Society, Geist reported 24 cases of men-



ometrorrhagia treated with Antuitrin-S with no striking therapeutic effects.

These authors are now reporting the results obtained with Antuitrin-S in 14 additional cases of menometrorrhagia. All 14 cases were treated for a period of three months. The substance was given by intramuscular injection three times weekly beginning with a dose of 3 cc. per injection. The cases were selected with the express purpose of determining the efficacy of the preparation used and for that reason no other therapy was given with the exception of hygienic measures instituted in 2 cases. The series was limited because the cases were selected to rule out any other lesion than that associated with true functional menometrorrhagia.

Only two cases showed definite improvement. One of these was an 18-year-old virgin who had bled continuously for 33 days before treatment and who stopped bleeding almost immediately after the injections were instituted. The authors feel that it was of greater interest, however, that the patient remained amenorrheic for 3½ months even after treatment was discontinued. The other patient who showed definite improvement was 45 years old, markedly asthenic and here general hygienic measures were included as a part of her treatment. Of the remaining patients seven were not at all improved and the other five were only slightly relieved. They used the term "slight improvement" to mean shortening of the duration of the period of bleeding to a minor extent and can in no circumstance be interpreted as demonstrating an actual beneficial effect.

The authors feel that patients such as the first one quoted who showed remarkable improvement and was then amenorrheic for three and one-half months after treatment very likely unduly prejudice the physician in favor of any material which he may have used. They, therefore, emphasize that the "coincident" factor must not be regarded too lightly.

In the other case that showed marked improvement, they point out that hygienic measures which were included in the treatment due to the patient's marked asthenia, may have played more than a casual role.

In contrast to the series reported here the authors call attention to a controlled group of menometrorrhagia cases which have shown improvement under a regime of such simple measures as ergot, short hot douches, or following no active treatment at all.

The authors recognize the fact that their results are in marked variance with the reports to be found in the literature. They call attention to the repeated references prior to 1925 to the efficacy of endocrine preparations long since proven inert. They feel that careful scrutiny of the literature brings to light facts about the use of preputiary and female sex hormone preparations which are not only interesting but also actually astounding when subjected to analysis. The authors have elaborate tables representing a cross section of the recent literature and they feel these are fairly representative of claims made for various endocrine products. They are at the outset struck by the great variety of conditions in which the preputiary and female sex hormones have been applied. In the abnormalities of the female genital system the reports are, on the whole, favorable. Even if the use of these preparations were successful in amenorrheas and oligomenorrheas, they question the wisdom of subjecting these patients to constant injection. On the other hand, they feel that a careful investigation of the patient's general condition and proper recognition of asthenia, hypothyroidism or obesity are of far greater importance.

In the literature, the results are conflicting in the

menometrorrhagias. One will warn against using the preputiary hormone while another finds it useful. "Schmidt and Anselmino do not find hormonal therapy efficacious in menstrual disturbances, but obtain good results in climacteric eczema, urticaria, pemphigus, pruritus, and arthritis deformans." The authors feel that these varied opinions are testimony to the fact that hormonal therapeutics at the present time leaves much to be desired.

They mention in passing that they believe that snake venom therapy as reported by Peck and Goldberger (see abstract above) in functional bleeding is probably the most efficacious treatment in use at the present time.

**Comment:** It is quite clear that Geist and Spielman have a very pessimistic attitude about the efficacy of the present endocrine preparations. This is probably not entirely justified upon the basis of their intelligent use. On the other hand, there are many physicians who are employing endocrine preparations for innumerable diseases as well as uterine bleeding with apparent disregard to careful investigation in the first place and to other tried means of therapeutics in the second place. It is evident that none of the therapeutic endocrine preparations is a substitute for careful investigation nor should they be, nor can they be employed with complete disregard of other means of treatment.

As one sees large numbers of patients with menometrorrhagia, one cannot but be impressed with the importance and close relationship between the remainder of the glandular system and the general health of the individual. These patients require the most striking painstaking history, examination and advice. As an example of the influence of general health it is only necessary to call attention to frequent instances of menometrorrhagia which have their origin with the asthenia and anemia following severe attacks of influenza.

While not agreeing entirely with the pessimistic attitude of Geist and Spielman concerning the present endocrine preparations in treatment of menometrorrhagia, one cannot but be impressed with the wide variation in reports and the apparent disregard of sound medical principles with substitution of endocrine therapy in their stead.

The efficacy of snake venom therapy has not yet been thoroughly established but seems to be very promising.

—Wendell Long.

The following reports were made at the meeting of the Paris Surgical Society (Société de Chirurgie) October 24, 1934. Abstracts over the name of G. Cordier were published in *La Presse Médicale* November 3, 1934:

**I. Calcification of the Nucleus Pulposus (Calcification du Nucleus Pulposus).** By L. Guichard and A. Simon. The report was presented by M. Albert Mouchet.

A man of 38, ill for 7 years, the chief complaint being pain in the back (rachialgie). He had been treated for Pott's disease of the spine. The reappearance of pain of a radicular type led to a new radiographic examination of the spine which showed disseminated calcification of two intervertebral discs.

In this connection, the reporter recalled the first work of Calvé and Galland and the fundamental contribution of Mauric.

The cause is obscure. Both infection and trauma have been incriminated. Tuberculosis might play a part.

Treatment is difficult. Radiotherapy should be tried.

If unsatisfactory, fixation by Albee graft should be considered.

M. Petit Dutailis has seen a similar case following traumatism. He remarks that it is difficult to explain the pains because the discs do not have a nerve supply, and there is not, generally, compression of cord or nerve roots.

**Comment:** Recently, I heard a most interesting report—I think it was by Scudder, of Boston, about a man who had an injury of the back, but recovered so that he was able to return to work. Eight years later there was pain and interference with the function of the legs. A neurological examination revealed an obstruction of the spinal canal about the dorso-lumbar junction. At operation a mass was found attached to the wall of the canal. After removal, the symptoms disappeared, but the most striking thing in the report was that the pathologist identified the tissue as nucleus pulposus tissue. It was believed that at the time of the injury there had been extensive damage of an intervertebral disc (or, intervertebral fibro-cartilage) so that there was escape of some of the nucleus pulposus (the pulpy material in the center of an intervertebral disc), and that it found its way into the spinal canal through rents in the posterior common ligament which normally separates the bodies of the vertebrae and the intervertebral discs from the spinal canal.

## II. Inflammation of Both Carpal Semi-lunar Bones in a Man of 20 Years (Lunarite des Deux Poignets Chez un Homme de 20 Ans). This report was made by M. Albert Mouchet for M. Marc Nedelec of Angers.

As usual, the patient was a young man whose occupation, that of a farmer, subjected him to small, repeated traumatisms of the wrists. At first there was pain in the right wrist, then in the left. Radiographic examination showed a flattened right semilunar with augmented opacity. On the left side there was increased opacity but scarcely any flattening. There was a trace of a transverse fracture line near one articular surface. Briefly, there was heaping up of the semilunar without direct violent traumatism, the condition following small, repeated, professional (or occupational) traumatisms. The semilunar and the scaphoid are very fragile bones in which fissures are easily produced, and which leave behind these incomplete fractures ("fractures parcellaires") an osseous condensation, sometimes with eburnation.

In the discussion, M. Madier refers to lunaritis, or inflammation of the semilunar bone as the disease of Kienbock, and suggests that it exists prior to traumatism, but it is not recognized until an investigation following the traumatism.

## III. A Characteristic Aspect of Osseous Mycosis (Sur un Aspect Caractéristique de Mycoses Osseuses). This report was made by M. E. Sorrell for M. Meyer and R. Sartory.

A patient presented a suspected ulceration in the vicinity of one breast, with a hard tumor near the gland. The tumor was removed without touching the breast. The histological examination revealed a mycosis which was rapidly cured by the administration of iodides.

Four localizations in the femoral and humeral diaphyses and three localizations in the os calcis have given comparable radiographic images: a limited area of destruction surrounded by an opaque border. This aspect of a cyst surrounded by a condensed zone with-

out decalcification at a distance and without periosteal reaction is the radiological characteristic of osseous mycosis.

Formerly, a distinction was made between three types: the form indicating osteomyelitis with total necrosis of the bone and the possibility of a spontaneous fracture, primitive hypertrophic ositis with thickening of the periosteum, and, third, the intraosseous gumma.

Attention is directed to the necessity of being definite in excluding an actinomycosis.

Mycosis of the bones is not seen very often, but it is suggested that discharges from all chronic suppurative processes ought to be examined in laboratory in order to not overlook the existence of a mycosis—this for a very practical reason, namely, that fungus diseases of this character usually yield to treatment by the iodides.

## IV. Two Observations of Bullet Wounds of the Transverse Colon, Treated by Exteriorization of the Wounded Segment of the Colon, Followed by Cure (Deux Observations de Plaies par Balle du Colon Transverse, Traitées par l'exteriorisation du Segment Colique blessé, et Guéries).

M. Jacques-Charles Bloch reported wound of the transverse colon with ecchymotic infiltration of the omentum, cured by simple exteriorization. In the same way, multiple wounds of the small intestine and transverse colon are treated and cured by suture of the wounds in the small intestine and exteriorization of the large intestine. It seems that the value of exteriorization for wounds of the transverse colon when it is difficult to determine the exact site of the perforations is not properly recognized. The author insists that it is a rapid, easy and benign method that ought to be employed when there is any doubt about the vitality of the colon or about the confidence to be placed in the ordinary method of suture. He was supported by Moure, Lance and Proust, each of whom reported a very satisfactory experience with this method of treating contused wounds of the colon during the great war.

—LeRoy Long.

## CLINICAL SPECTROSCOPY: SEVENTY CASES OF GENERALIZED ARGYROSIS FOLLOWING ORGANIC AND COLLOIDAL SILVER MEDICATION, INCLUDING A BIOSPECTROMETRIC ANALYSIS OF TEN CASES

L. Edward Gaul and A. H. Staud, New York (Journal A. M. A., April 20, 1935), observed and report seventy cases of argyria following the indiscriminate use of organic and colloidal silver compounds. The degree of discoloration is directly dependent on the duration and the intensity of solar or artificial radiation and the quantity of silver present. Argyria becomes clinically apparent after a silver retention approximating an equivalent of 8 Gm. of silver arspenamine. A biospectrometric test supplies the syphilologist with a method for determining the silver retention before and during silver arspenamine therapy. The total silver retention irrespective of the origin should never exceed 7 Gm. equivalent of silver arspenamine. A biospectrometric analysis offers a new diagnostic test for the identification of an argyrosis.



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NOTE—Corrections and additions to the above list will be cheerfully accepted.

# ROSTER

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BRADSHAW, J. O.	Welch
DARROUGH, J. B.	Vinita
ELAM, B. L.	Centralia
GASTINEAU, E. T.	Vinita
HAYS, P. L.	Vinita
HERRON, A. W.	Vinita
MARKS, W. R.	Vinita
MITCHELL, R. L.	Muskogee
NEER, C. S.	Vinita
STOUGH, D. B.	Vinita
WALKER, C. F.	Grove

## CREEK

BISBEE, W. G.	Bristow
COPPEDGE, O. C.	Bristow
COWART, O. H.	Bristow
CROSTON, G. C.	Sapulpa
HOLLIS, J. E.	Bristow
KING, E. W.	Bristow
LAMPTON, J. B.	Sapulpa
LEWIS, P. K.	Sapulpa

LONGMIRE, W. P.	Sapulpa
MATTENLEE, JAMES M.	Sapulpa
MOTE, PAUL	Sapulpa
McCALLUM, C. L.	Sapulpa
McDONALD, C. R.	Manford
NEAL, W.M. J.	Drumright
REYNOLDS, E. W.	Bristow
REYNOLDS, S. W.	Drumright
SCHRADER, CHARLES	Bristow
SCHWAB, C. B.	Sapulpa
SISLER, FRANK H.	Bristow
STARR, O. W.	Drumright
WELLS, JOHN M.	Bristow
WILLIAMS, J. CLAY	Bristow

## CUSTER

ALLEN, F. W.	Leedy
ALEXANDER, C. J.	Clinton
BAGLEY, JAMES A.	Clinton
BOYD, T. A.	Weatherford
CARLSON, D. G.	Clinton
DOLER, C.	Clinton
FRIZZELL, J. T.	Clinton
GOSSOM, K. D.	Custer City
HICKMAN, ROBT. L.	Clinton
HINSHAW, J. R.	Butler
LAMB, ELLIS	Clinton
LAMB, LEALON	Clinton
LOYD, E. M.	Taloga
McBURNERY, C. H.	Clinton
PARKER, O. H.	Custer City
PAULSON, A. W.	Clinton
ROGERS, McLAIN	Clinton
ROLLE, NEESON	Custer City
RUHL, N. E.	Weatherford
VIEREGG, FRANK R.	Clinton
WILLIAMS, GORDON D.	Weatherford
WILSON, H. H.	Clinton

## DELAWARE

TODD, J. H.	Jay
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## GARFIELD

AITKEN, W. A.	Enid
BAGBY, E. L.	Enid
BAKER, R. C.	Enid
BITTING, B. T.	Enid
BRADY, RICHARD T.	Enid
CHAMPLIN, PAUL B.	Enid
COTTON, LEE W.	Enid
DUFFY, FRANCIS M.	Enid
FIELD, JULIAN	Enid
FRANCISO, GLEEN	Enid
FRANCISO, J. W.	Enid
GILL, W. W.	Enid
GREGG, O. R.	Enid
HAMBLE, V. R.	Enid
HARRIS, D. S.	Drummond
HARTMAN, G. W.	Eharon, Pa.
HINSON, BRUCE R.	Enid
HINSON, T. B.	Enid
HOPKINS, P. W.	Enid
HUDSON, F. A.	Enid
HUDSON, H. H.	Enid
JACOBS, RAYMOND G.	Enid
KENDALL, W. L.	Enid
KIEBLER, W. G.	Enid
LAMBERTON, W. E.	Enid
MAYBERRY, S. M.	Enid
McEVOY, S. H.	Enid
McINNIS, A. L.	Enid
NEILSON, WM. P.	Enid
NEWELL, W. B.	Enid
PIPER, A. S.	Enid
RHODES, W. H.	Enid

ROBERTS, D. D.	Enid
SHANNON, H. R.	Enid
SHEETS, MARION E.	Enid
SWANK, J. R.	Enid
VANDEVER, H. F.	Enid
WALKER, J. R.	Enid
WATSON, J. M.	Enid
WILKINS, A. E.	Covington
WOLFE, E. J.	Waukomis

## GARVIN

ALEXANDER, ROBT. M.	Paoli
BURNS, S. L.	Stratford
CALLAWAY, JOHN R.	Pauls Valley
GREENING, W. P.	Pauls Valley
GROSS, J. F.	Lindsay
JOHNSON, G. L.	Pauls Valley
LINDSEY, RAY H.	Pauls Valley
MONROE, HUGH H.	Lindsay
PRATT, CHAS. M.	Lindsay
ROBBERSON, M. E.	Lindsay
SHI, A. H.	Stratford
SULLIVAN, C. L.	Elmore City
TAYLOR, E. H.	Maysville
WALKER, THOS.	Wynnewood
WILSON, H. P.	Wynnewood

## GRADY

AMBRISTER, J. C.	Chickasha
BAZE, W. J.	Chickasha
BARRY, W. R.	Alex
BLEDSE, MARTHA	Chickasha
BOON, U. C.	Chickasha
BONNELL, W. LEROY	Chickasha
COX, C. P.	Ninnekah
DOWNNEY, D. S.	Chickasha
EMANUEL, L. E.	Chickasha
EMANUEL, R. E.	Chickasha
GERARD, G. R.	Chickasha
HAMPTON, P. J.	Rush Springs
HENNING, A. E.	Tuttle
HUME, R. R.	Minco
LEEDS, A. B.	Chickasha
LITTLE, AARON	Minco
LIVERMORE, W. H.	Chickasha
MASON, REBECCA H.	Chickasha
MITCHELL, C. P.	Chickasha
McCLURE, H. M.	Chickasha
NUNNERY, A. W.	Chickasha
PYLE, OSCAR	Chickasha
RENEGAR, J. F.	Tuttle
WILBOURN, C. E.	Alex
WOODS, L. E.	Chickasha

## GRANT

HARDY, I. V.	Medford
HAMILTON, A. L.	Manchester
LAWSON, E. E.	Medford
LIVELY, S. A.	Wakita

## GREER

BAIRD, J. B.	Mangum
BORDER, G. F.	Mangum
CHAMBERS, M. E.	Vinson
CHERRY, G. P.	Mangum
DODSON, W. O.	Willow
HOLLIS, J. B.	Mangum
LANDSEN, J. B.	Granite
LOWE, J. T.	Mangum
MEREDITH, J. S.	Duke
NELSON, H. J.	Granite
OLIVER, W. D.	Mangum
PEARSON, L. E.	Mangum
POER, E. M.	Mangum



## HARMON

HOPKINS, SAMUEL W.	Hollis
HUSBAND, WM. G.	Hollis
JONES, JAMES E.	Hollis
LYNCH, RUSSELL H.	Hollis
RAY, W. T.	Gould
YEARGAN, W. M.	Hollis

## HASKELL

HILL, ARTHUR T.	Stigler
RUMLEY, JAMES C.	Stigler
TURNER, THOS. BOYD	Stigler
WILLIAMS, N. K.	McCurtain

## HUGHES

BENTLEY, J. A.	Allen
BUTTS, A. M.	Holdenville
BUTTS, IMOGENE	Holdenville
DAVENPORT, A. L.	Holdenville
DIGGS, G. W.	Wetumka
FELIX, T. B.	Holdenville
FLOYD, W. E.	Holdenville
FORD, R. B.	Holdenville
FREY, HARRY	Holdenville
HAMILTON, S. H.	Non
HEMPHILL, J. A.	Wetumka
HOWELL, H. A.	Holdenville
HICKS, C. A.	Wetumka
MITTMELMAN, H. A.	Calvin
MORRIS, R. D.	Allen
PRYOR, V. W.	Holdenville
TAYLOR, WM. L.	Holdenville
WALLACE, C. S.	Holdenville

## JACKSON

ABERNETHY, EDWARD A.	Altus
ALLGOOD, JOHN E.	Altus
BERRY, THOS. A.	Eldorado
BIRD, JESSE	Eldorado
BROWN, R. F.	Altus
CROW, E. S.	Olustee
ENSEY, J. E.	Altus
FOX, RAYMOND H.	Altus
HIX, J. B.	Altus
MABRY, E. W.	Altus
McCONNELL, L. H.	Altus
REID, JOHN	Altus
RUDELL, W. P.	Altus
SPEARS, C. G.	Altus
TAYLOR, R. Z.	Blair

## JEFFERSON

ANDREWSKOSKI, W. T.	Ryan
BROWNING, W. M.	Waurika
COLLINS, D. B.	Waurika
DERR, J. I.	Waurika
EDWARDS, F. M.	Ringling
HOLLINGSWORTH, J. I.	Waurika
MAUPIN, C. M.	Waurika
MINGUS, F. M.	Loco
McPHERSON, J. M.	Terrell
WADE, L. L.	Ryan
WATSON, J. W.	Ryan

## JOHNSTON

CLARK, GUY	Milburn
LOONEY, J. T.	Tishomingo

## KAY

ARMSTRONG, W. O.	Ponca City
ARRENDALL, C. W.	Ponca City
BEATTY, J. H.	Tonkawa
BECKER, L. H.	Blackwell
BERRY, J. L.	Blackwell
BROWNE, H. S.	Ponca City
CLIFT, M. C.	Blackwell

DARNELL, E. E.	White Eagle Sta., R. 4, Ponca City
DENHAM, T. W.	Three Sands
GIBSON, R. B.	Ponca City
GORDON, D. M.	Ponca City
GOWEY, H. O.	Newkirk
HAWKINS, J. C.	Blackwell
HOWE, J. H.	Ponca City
HUDSON, J. O.	Braman
KREGER, G. S.	Tonkawa
LESLIE, W. M.	Blackwell
MALL, W. W.	Ponca City
MATHEWS, DEWEY	Tonkawa
MILLER, D. W.	Blackwell
MORGAN, L. S.	Ponca City
McELROY, THOMAS	Ponca City
MOORE, G. C.	Ponca City
NEAL, L. G.	Ponca City
NIEMAN, GEO. H.	Ponca City
NORTHCUTT, C. E.	Ponca City
NUCKOLS, A. S.	Ponca City
OBERMILLER, R. G.	Ponca City
RISSEY, A. S.	Blackwell
SPENCE, H. M.	Ponca City
STALEY, P. A.	Ponca City
WAGGONER, E. E.	Tonkawa
WAGNER, J. C.	Ponca City
WALKER, I. D.	Tonkawa
WHITE, M. S.	Blackwell
VANCE, L. C.	Ponca City
YEARY, G. H.	Newkirk

## KINGFISHER

CAVETT, E. R.	Loyal
DIXON, A.	Hennessey
FISK, CHAS. W.	Kingfisher
HODGSON, C. M.	Kingfisher
LATTIMORE, F. C.	Kingfisher
PENDLETON, JOHN W.	Kingfisher
STURGEON, H. V.	Hennessey
TOWNSEND, B. D.	Hennessey

## KIOWA

ADAMS, J. L.	Hobart
BRAUN, J. P.	Hobart
BRYCE, J. R.	Snyder
BONHAM, J. M.	Hobart
FINCH, J. WM.	Sentinel
HATHAWAY, A. H.	Mt. View
LAND, J. A.	Hobart
LLOYD, H. C.	Hobart
MARTIN, F. F.	Roosevelt
McLWAIN, WM.	Lone Wolf
MOORE, J. H.	Hobart
RITTER, J. M.	Roosevelt
WALKER, F. E.	Lone Wolf
WATKINS, B. H.	Hobart

## LATIMER

HAMILTON, E. B.	Wilburton
HARRIS, J. M.	Wilburton
HENRY, T. L.	Wilburton
RICH, R. L.	Red Oak

## LeFLORE

BAKER, F. P.	Talihina
BEVILL, S. D.	Poteau
BOOTH, G. R.	LeFlore
COLLINS, E. L.	Panama
DEAN, S. C.	Howe
DUFF, W. M.	Braden
FAIR, E. N.	Heavener
GILLIAM, W. C.	Spiro
HARTSHORNE, G. E.	Spiro
*HARDY, HARRELL	Poteau
HEAD, W. M.	Talihina

\*Deceased

HUNT, W. J. ....	Poteau
JONES, L. D. ....	Talihina
MINOR, R. W. ....	Williams
ROSBOROUGH, W. D. ....	Sanatorium, Miss.
SHIPPEY, W. L. ....	Wister
WOODSON, E. M. ....	Poteau
WRIGHT, R. L. ....	Poteau

## LINCOLN

ADAMS, JOHN W. ....	Chandler
ANDERSON, W. D. ....	Stroud
BAIRD, W. D. ....	Stroud
BROWN, F. C. ....	Sparks
BURLESON, NED ....	Prague
ERWIN, PARA F. ....	Wellston
HURLBURT, E. F. ....	Meeker
JENKINS, H. B. ....	Tryon
MARSHALL, A. M. ....	Chandler
NASH, W. G. ....	Sparks
NICKELL, U. E. ....	Davenport
NORWOOD, F. H. ....	Prague
ROBERTSON, C. W. ....	Chandler
ROLLINS, JOHN S. ....	Prague
SOSBEE, J. W. ....	Stroud

## LOGAN

ALLEN, ROBERT ....	Guthrie
BARKER, C. B. ....	Guthrie
BARKER, E. O. ....	Guthrie
BARKER, PAULINE ....	Guthrie
CORNWELL, N. L. ....	Coyle
FIRST, F. R. ....	Crescent
GARDNER, P. B. ....	Marshall
GOODRICH, E. E. ....	Crescent
GRAY, DAN ....	Guthrie
HAHN, L. A. ....	Guthrie
HILL, C. B. ....	Guthrie
LARKIN, H. W. ....	Minco
LeHEW, J. L., Jr. ....	Guthrie
MILLER, W. M. C. ....	Guthrie
PETTY, C. S. ....	Guthrie
RINGROSE, R. F. ....	Guthrie
RITZHAUPT, L. H. ....	Guthrie
SOUTER, J. E. ....	Guthrie
TICHENOR, E. L. ....	Crescent
TRIGG, F. E. ....	Guthrie
WEST, A. A. ....	Guthrie

## MAJOR

HARRIS, FRANK M. ....	Fairview
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## MARSHALL

HAYNIE, W. D. ....	Kingston
HOLLAND, J. L. ....	Madill
LOGAN, J. H. ....	Lebanon
ROBINSON, P. F. ....	Madill
VEAZEY, J. H. ....	Madill

## MAYES

ADAMS, SYLBA ....	Hayward, Wis.
BRYANT, W. C. ....	Choteau
HACKLER, H. W. ....	Pryor
HOLLINGSWORTH, J. E. ....	Strang
MORROW, B. L. ....	Salina
PUCKETT, CARL ....	22 W. 6th, Oklahoma City
RUTHERFORD, V. M. ....	Pryor
WHITE, L. C. ....	Adair
WHITAKER, W. J. ....	Pryor

## McCLAIN

BARGER, G. S. ....	Purcell
COCHRANE, J. E. ....	Byars
DAWSON, O. O. ....	Wayne
KOLB, I. N. ....	Blanchard
McCURDY, W. C. ....	Purcell
ROYSTER, R. L. ....	Purcell
SLOVER, B. W. ....	Blanchard

## McCURTAIN

BARKER, N. L. ....	Broken Bow
CLARKSON, A. W. ....	Valliant
HALL, LYMAN S. ....	Broken Bow
MORELAND, J. T. ....	Idabel
MORELAND, W. A. ....	Idabel
SHERILL, R. H. ....	Broken Bow
WILLIAMS, R. D. ....	Idabel

## McINTOSH

LEE, N. P. ....	Checotah
LITTLE, D. E. ....	Eufaula
MARSHALL, JOHN C. ....	Checotah
SMITH, F. L. ....	Eufaula
TOLLESON, W. A. ....	Eufaula
WOOD, J. L. ....	Eufaula

## MURRAY

ANADOWN, PAUL V. ....	Sulphur
BAILEY, HOWSON C. ....	Sulphur
BURKE, RICHARD M. ....	Sulphur
DUNHAM, HOWARD C. ....	Sulphur
HOUSE, REX C. ....	Sulphur
LUSTER, J. C. ....	Davis
POWELL, W. H. ....	Sulphur
SADLER, F. E. ....	Sulphur
SLOVER, GEORGE ....	Sulphur
SPROUSE, O. W. ....	Sulphur

## MUSKOGEE

BALLANCE, R. A. ....	Webbers Falls
BALLANTINE, H. T. ....	Surety Bldg.
BERRY, W. D. ....	Barnes Bldg.
BLAKEMORE, J. L. ....	Barnes Bldg.
BRUTON, L. D. ....	Comm'l Nat'l Bldg.
BURNS, H. C. ....	Webbers Falls
CAMPBELL, J. F. ....	Barnes Bldg.
DeGROOT, C. E. ....	Manhattan Bldg.
DONNELL, R. N. ....	Raymond Bldg.
DORWART, F. G. ....	Barnes Bldg.
DUCKETT, B. J. ....	Braggs
EARNEST, A. N. ....	Barnes Bldg.
EVERLY, A. W. ....	Equity Bldg.
EWING, FINIS W. ....	Surety Bldg.
FITE, E. HALSELL ....	Barnes Bldg.
FITE, WM. P. ....	Barnes Bldg.
FRYER, S. J. ....	Surety Bldg.
FULLENWIDER, CHAS. M. ....	Barnes Bldg.
GRAVES, J. R. ....	Boynton
HAMM, S. G. ....	Haskell
HARROD, R. T. ....	Oktaha
HEITZMAN, CHAS. W. ....	Barnes Bldg.
HOLCOMBE, R. NOWLIN ....	Surety Bldg.
JOBLIN, W. R. ....	Porter
KEITH, EMMA S. ....	Miami
KING, F. S. ....	Surety Bldg.
KUPKA, J. F. ....	Haskell
KLASS, OSCAR C. ....	Surety Bldg.
McALISTER, L. S. ....	Barnes Bldg.
MOBLEY, ARTHUR L., V't Fac'l't'y, Alb'q'rque, N. M. ....	
NEELY, S. D. ....	Comm. Nat'l Bldg.
NEUHAUSER, MAYER, Muskogee, U. S. Vet Hosp. ....	
NICHOLS, J. T. ....	Equity Bldg.
OLDHAM, I. B., Jr. ....	426 North 6th St.
OLDHAM, I. B. ....	426 North 6th St.
OSGOOD, W. W. ....	Equity Bldg.
RAFTER, J. G. ....	Manhattan Bldg.
REYNOLDS, JOHN ....	1st Nat'l Bldg.
RICE, C. V. ....	Barnes Bldg.
SCOTT, H. A. ....	Barnes Bldg.
THOMAS, L. M. ....	Webbers Falls
THOMPSON, M. K. ....	Surety Bldg.
TILTON, W. B. ....	Muskogee, U. S. Vet. Hosp.
VITTUM, J. S. ....	Equity Bldg.
WALLIS, G. F. ....	Fort Gibson
WARTERFIELD, F. E. ....	Comm. Nat'l Bldg.



WHITE, C. E. .... 562 North 6th St.  
 WHITE, J. HUTCHINGS ..... Surety Bldg.  
 WILKEMEYER, F. J. .... Muskogee, U. S. Vet. Hosp.  
 WOLFE, IRA C. .... 426 North 6th St.  
 WOODBURN, J. T. .... Surety Bldg.

## NOBLE

CAVITT, R. A. .... Morrison  
 COOKE, C. H. .... Perry  
 EVANS, A. M. .... Perry  
 FRANCIS, J. W. .... Perry  
 PIERSON, D. D. .... Perry  
 RENFROW, T. F. .... Billings

## NOWATA

LANG, S. A. .... Nowata  
 PRENTISS, H. M. .... Nowata  
 ROBERTS, S. P. .... Nowata  
 SCOTT, M. B. .... Delaware  
 SUDDERTH, J. P. .... Nowata

## OKFUSKEE

ADAMS, ALLEN C. .... Weleetka  
 BARTOW, A. C. .... Okfuskee  
 BLOSS, C. M. .... Okemah  
 BRICE, M. O. .... Okemah  
 BOMBARGER, C. C. .... Paden  
 CARROLL, W. B. .... Okemah  
 COCHRAN, C. M. .... Okemah  
 DOVELL, J. C. .... Paden  
 JENKINS, W. P. .... Okemah  
 KENNEDY, J. A. .... Okemah  
 KEYES, ROBERT ..... Route No. 2, Okemah  
 LUCAS, A. C. .... Castle  
 MELTON, A. S. .... Okemah  
 PEMBERTON, J. M., 217½ W. Comm., Okla City  
 PRESTON, J. R. .... Weleetka  
 SPICKARD, L. J. .... Okemah

## OKLAHOMA

ADAMS, ROBERT H. .... Ramsey Tower  
 AKIN, R. H. .... 200 W. 10th  
 ALFORD, J. M. .... Medical Arts Bldg.  
 ALLEN, E. P. .... Osler Bldg.  
 ALLEN, G. T. .... Osler Bldg.  
 ANDREWS, LELIA E. .... Osler Bldg.  
 ARRINGTON, C. T. .... 805 N. Walnut  
 BAILEY, F. M. .... 1219 NW 21st  
 BAILEY, W. H. .... 300 W. 12th  
 BALLYEAT, RAY M. .... Osler Bldg.  
 BATCHELOR, JOHN J. .... Medical Arts Bldg.  
 BATES, C. E. .... Federal Bldg.  
 BARKER, CHAS. E. .... Osler Bldg.  
 BERRY, C. N. .... Medical Arts Bldg.  
 BEYER, M. R. .... 2006 NW 39th  
 BINKLEY, J. G. .... Medical Arts Bldg.  
 BINKLEY, J. SAM ..... Medical Arts Bldg.  
 BLACHLY, C. D. .... 3752 NW 18th  
 BLACHLY, L. S. .... 2752 NW 18th  
 BOATRIGHT, LLOYD C. .... Perrine Bldg.  
 BOGGS, NATHAN ..... Perrine Bldg.  
 BOLEND, REX ..... Medical Arts Bldg.  
 BONDURANT, C. P. .... Medical Arts Bldg.  
 BONHAM, WM. L. .... Medical Arts Bldg.  
 BORCKEY, GEO. L. .... Ramsey Bldg.  
 BOWEN, RALPH ..... 1200 N. Walker  
 BRADLEY, H. C. .... Perrine Bldg.  
 BRANHAM, D. W. .... 300 W. 12th  
 BREWER, A. M. .... Perrine Bldg.  
 BROWN, CHAS. P. .... Perrine Bldg.  
 BROWN, G. W. .... Medical Arts Bldg.  
 BRUNDAGE, C. L. .... Osler Bldg.  
 BUCHANAN, THOS. A. .... Amer. Nat'l Bldg.  
 BURTON, JOHN F. .... Osler Bldg.  
 BUTLER, H. W. .... 1200 N. Walker  
 CAILEY, LEO ..... Medical Arts Bldg.

CAMPBELL, COYNE H. .... Medical Arts Bldg.  
 CANADA, J. C. .... 217½ W. Commerce  
 CATES, ALBERT ..... Medical Arts Bldg.  
 CHARNEY, L. H. .... Medical Arts Bldg.  
 CHASE, A. B. .... Colcord Bldg.  
 CHRISTIAN, PAUL C. .... Federal Bldg.  
 CLARK, ANSON L. .... Medical Arts Bldg.  
 CLOUDMAN, H. H. .... Medical Arts Bldg.  
 CLYMER, C. E. .... Medical Arts Bldg.  
 COLEY, A. J. .... Medical Arts Bldg.  
 COLLINS, H. DALE ..... Medical Arts Bldg.  
 COOPER, F. M. .... Medical Arts Bldg.  
 CUNNINGHAM, S. R. .... Medical Arts Bldg.  
 DAILY, H. J. .... Medical Arts Bldg.  
 DANIELS, HARRY A. .... Colcord Bldg.  
 DAVIS, C. E. .... Medical Arts Bldg.  
 DAVIS, E. P. .... 918 NW 23rd  
 DEMAND, F. A. .... 1200 N. Walker  
 DERSCH, WALTER H. .... Medical Arts Bldg.  
 DICKSON, GREEN K. .... 1200 N. Walker  
 DILL, FRANCIS E. .... Medical Arts Bldg.  
 DOUGHERTY, VIRGIL F. .... Gorei, Abyssinia, Africa  
 DOWDY, T. W. .... Medical Arts Bldg.  
 DUNCAN, DARRELL G. .... Medical Arts Bldg.  
 EARLY, R. O. .... Medical Arts Bldg.  
 EASTLAND, W. E. .... Medical Arts Bldg.  
 ELEY, N. PRICE ..... 400 W. 10th  
 EMENHISER, LEE ..... University Hospital  
 EPLEY, C. O. .... 1200 N. Walker  
 ESKRIDGE, J. B., Jr. .... 1200 N. Walker  
 ERWIN, F. B. .... Medical Arts Bldg.  
 FAGIN, HERMAN ..... 400 W. 10th  
 FARIS, BRUNEL D. .... Medical Arts Bldg.  
 FERGUSON, F. GORDON ..... Medical Arts Bldg.  
 FERGUSON, E. S. .... Medical Arts Bldg.  
 FIELD, C. H. .... Medical Arts Bldg.  
 FISHMAN, C. J. .... 132 W. 4th  
 FITZ, R. G. .... Taming, Fu Hoppi, Province N. China  
 FLESHER, T. H. .... Edmond  
 FRIERSON, S. E. .... Medical Arts Bldg.  
 FRYER, S. R. .... 119 W. 5th  
 FULTON, CLIFFORD C. .... Medical Arts Bldg.  
 FULTON, GEO. .... Am. Nat'l Bldg.  
 GARRISON, GEO. H. .... 1200 N. Walker  
 GEE, O. J. .... Medical Arts Bldg.  
 GIBBS, ALLEN G. .... Ramsey Tower  
 GLOMSET, JOHN L. .... 1200 N. Walker  
 GOLDFAIN, E. .... 717 N. Robinson  
 GOODWIN, R. Q. .... Medical Arts Bldg.  
 GRAENING, P. K. .... Colcord Bldg.  
 GRAHAM, A. T. .... 104 W. Commerce  
 GRAY, J. WORTH ..... Security Bldg.  
 GRAY, FLOYD ..... 1200 N. Walker  
 GREGORY, M. S. .... 2209 NW 22nd  
 GUTHRIE, A. L. .... 1200 N. Walker  
 HALL, C. H. .... Medical Arts Bldg.  
 HAMMONDS, O. O. .... Medical Arts Bldg.  
 HANEY, A. H. .... Perrine Bldg.  
 HARBISON, FRANK ..... Terminal Bldg.  
 HARBISON, J. E. .... Terminal Bldg.  
 HARRIS, H. W. .... 1200 N. Walker  
 HASKETT, PAUL E. .... Hales Bldg.  
 HAYES, B. A. .... Osler Bldg.  
 HAZEL, ONIS G. .... 400 W. 10th  
 HEATLEY, JOHN E. .... Medical Arts Bldg.  
 HERRMAN, JESS ..... Medical Arts Bldg.  
 HETHERINGTON, A. J. .... 2014 Gatewood  
 HICKS, F. B. .... Medical Arts Bldg.  
 HIRSHFIELD, A. C. .... Medical Arts Bldg.  
 HOLLIDAY, J. R. .... Osler Bldg.  
 HOOD, F. REDDING ..... Osler Bldg.  
 HOWARD, ROBERT L. .... 1200 N. Walker  
 HOWARD, R. M. .... Osler Bldg.  
 HUGGINS, J. R. .... City Hall Bldg.  
 HUNTER, GEORGE ..... Wewoka  
 HYROOP, GILBERT L. .... Medical Arts Bldg.

JACKSON, ALVIN R.	Perrine Bldg.	O'DONOGHUE, D. H.	Medical Arts Bldg.
JACOBS, MINARD F.	Medical Arts Bldg.	PADBERG, J. W.	1800 W. 16th
JANCO, LEON	10 West Park	PARKS, K. G.	Ramsey Tower
JETER, HUGH	Osler Bldg.	PAULUS, D. D.	300 W. 12th
JOLLY, W. J.	416 W. 14th	PAYTE, J. I.	Medical Arts Bldg.
JONES, HUGH C.	Medical Arts Bldg.	PENICK, G.	Colcord Bldg.
KAHLE, C. E.	1738 W. 16th	PELPHS, A. S.	Medical Arts Bldg.
KELLEY, JOHN F.	Medical Arts Bldg.	PINE, JOHN S.	Medical Arts Bldg.
KELLER, W. F.	Medical Arts Bldg.	POINTS, BLAIR	Luther
KELSO, JOSEPH W.	Medical Arts Bldg.	POSTELLE, J. M.	Medical Arts Bldg.
KELTZ, BERT F.	Medical Arts Bldg.	POUNDERS, CARROLL M.	Osler Bldg.
KERNODLE, S. E.	First Nat'l Bldg.	PRICE, J. S.	Medical Arts Bldg.
KIMBALL, GEO. H.	Ramsey Tower	RECK, JOHN A.	Colcord Bldg.
KUCHAR, V.	1210 NW 17th	REED, EMIL P.	1200 N. Walker
KUHN, JOHN F.	Medical Arts Bldg.	REED, HORACE	Osler Bldg.
LAIN, E. S.	Medical Arts Bldg.	REED, JAMES R.	Medical Arts Bldg.
LAMB, JOHN H.	Medical Arts Bldg.	REICHMANN, RUTH S.	124 NW 15th
LAMBKE, PHIL M.	1220 SE 29th	RIELY, LEA A.	Medical Arts Bldg.
LaMOTTE, GEO. A.	Colcord Bldg.	RILEY, J. W.	119 W. 5th
LANE, LLOYD C.	311 W. 9th	ROBINSON, J. H.	300 W. 12th
LANGSFORD, WM.	323 NE 11th	RODDY, JOHN A.	Ramsey Tower
LANGSTON, WANN	Medical Arts Bldg.	ROLAND, M. M.	Medical Arts Bldg.
LAWSON, N. E.	1616 NW 26th	ROSENBERGER, F. E.	Perrine Bldg.
LAWSON, PAT	Medical Arts Bldg.	ROUNTREE, C. R.	1200 N. Walker
LEE, CLARENCE E.	Hightower Bldg.	RUCKS, W. W., Jr.	300 W. 12th
LEHMER, ELIZABETH	132 NW 4th	RUCKS, W. W., Sr.	300 W. 12th
LEMON, C. W.	Medical Arts Bldg.	RUHL, A. M.	Edmond
LENEY, FANNIE LOU	400 W. 10th	SADLER, LeROY H.	Osler Bldg.
LEONARD, C. E.	Medical Arts Bldg.	SALOMON, A. L.	1200 N. Walker
LEWIS, A. R.	Hightower Bldg.	SANDS, A. J.	Choctaw
LINGENFELTER, F. M.	1200 N. Walker	SANGER, F. M.	Key Bldg.
LITTLE, J. R.	Ramsey Tower	SANGER, FENTON A.	Key Bldg.
LONG, LeROY	Medical Arts Bldg.	SANGER, WINNIE M.	Key Bldg.
LONG, LeROY D.	Medical Arts Bldg.	SERWER, MILTON	1200 N. Walker
LONG, ROSS D.	617 NW 17th	SEWELL, DAN R.	400 NW 10th
LONG, WENDELL	Medical Arts Bldg.	SHELTON, J. W.	Medical Arts Bldg.
LOVE, R. S.	Medical Arts Bldg.	SHEPPARD, MARY V. S.	1200 N. Walker
LOWRY, DICK	Osler Bldg.	SMITH, CHAS. A.	Medical Arts Bldg.
LOWRY, TOM	Osler Bldg.	SMITH, D. G.	Medical Arts Bldg.
LOY, C. F.	Perrine Bldg.	SMITH, M.	1400 Classen Blvd.
LYON, J. I.	Edmond	SNOW, J. B.	Osler Bldg.
MacCABE, R. S.	Medical Arts Bldg.	STANBRO, G. E.	300 W. 12th
MacDONALD, J. C.	300 W. 12th	STARRY, L. J.	1200 N. Walker
MARGO, E.	717 N. Robinson	STILLWELL, R. J.	Amer. Nat'l Bldg.
MARTIN, HOWARD C.	Ramsey Tower	STONE, S. N.	Edmond
MARTIN, J. T.	1200 N. Walker	STOUT, MARVIN E.	209 W. 13th
McBRIDE, EARL D.	717 N. Robinson	STRADER, S. E.	Medical Arts Bldg.
McGEE, J. P.	Osler Bldg.	STROTHER, S. P.	120 NW 23rd
McHENRY, D. D.	Medical Arts Bldg.	SULLIVAN, ELIJAH S.	Medical Arts Bldg.
McHENRY, L. C.	Medical Arts Bldg.	SULLIVAN, ERNEST	Hightower Bldg.
McKINNEY, MILAN	Medical Arts Bldg.	TABOR, GEO. R.	First Nat'l Bldg.
McLAUCHLIN, J. R.	Medical Arts Bldg.	TAYLOR, CHAS. B.	Medical Arts Bldg.
McNEILL, PHILIP M.	Medical Arts Bldg.	TAYLOR, W. M.	1200 N. Walker
MECHLING, GEO. S.	Osler Bldg.	THOMPSON, W. J.	Osler Bldg.
MILES, W. H.	203 City Hall	TODD, H. COULTER	Colcord Bldg.
MILLER, N. L.	Medical Arts Bldg.	TOOL, DONOVAN	Edmond
MILLS, R. C.	City Hall Bldg.	TOWNSEND, C. W.	Medical Arts Bldg.
MOFFETT, J. A.	University Hospital	TRICE, S. T.	Hightower Bldg.
MOORE, ELLIS	Medical Arts Bldg.	TURNER, HENRY H.	Osler Bldg.
MORLEDGE, WALKER	Osler Bldg.	VAHLBERG, E. P.	Perrine Bldg.
MOOR, H. D.	800 E. 13th	VON WEDEL, CURT	Colcord Bldg.
MOORE, C. D.	Perrine Bldg.	YOUNG, A. M.	Medical Arts Bldg.
MOORMAN, FLOYD	1200 N. Walker	WAILS, THEODORE G.	Medical Arts Bldg.
MOORMAN, L. J.	1200 N. Walker	WARMACK, J. C.	1615 N. Robinson
MORGAN, C. A.	1st Nat'l Bldg.	WATSON, O. ALTON	400 W. 10th
MORRISON, H. C.	807 NW 23rd	WATSON, R. D.	Britton
MOTH, M. V.	Am. Nat'l Bldg.	WEIR, M. W.	Ramsey Tower
MULVEY, BERT E.	Medical Arts Bldg.	WELLS, EVA	Medical Arts Bldg.
MURDOCH, R. L.	Medical Arts Bldg.	WELLS, W. W.	Medical Arts Bldg.
MUSICK, E. R.	Medical Arts Bldg.	WEST, W. K.	Osler Bldg.
MUSICK, V. H.	217½ W. Commerce	WESTFALL, L. M.	Medical Arts Bldg.
MUSSIL, W. M.	Medical Arts Bldg.	WHITE, ARTHUR W.	Medical Arts Bldg.
MYERS, RALPH E.	Osler Bldg.	WHITE, OSCAR	Osler Bldg.
NAGLE, PATRICK S.	Medical Arts Bldg.	WHITE, PHIL E.	Perrine Bldg.
NICHOLSON, B. H.	300 W. 12th	WILDMAN, S. F.	Medical Arts Bldg.
NUNNERY, E. E.	253½ S. Robinson	WILKINS, HARRY	Medical Arts Bldg.



WILSON, E. C.	1001 NE 20th
WILSON, KENNETH J.	Medical Arts Bldg.
WILLIAMS, L. C.	1200 N. Walker
WILLIAMSON, W. H.	1st Nat'l Bldg.
WOLFF, J. P.	1200 N. Walker
WOODWARD, NEIL W.	1200 N. Walker
WRIGHT, HARPER	140 W. Commerce

## OKMULGEE

ALEXANDER, LIN	Okmulgee
BOLLINGER, I. W.	Henryetta
BOSWELL, H. D.	Henryetta
CARLOSS, T. C.	Morris
CARNELL, M. D.	Okmulgee
COTT, W. M.	Okmulgee
EDWARDS, J. G.	Okmulgee
GLISMANN, M. B.	Okmulgee
HOLMES, A. R.	Henryetta
HUDSON, W. S.	Okmulgee
KILPATRICK, G. A.	Henryetta
LESLIE, S. B.	Okmulgee
MABEN, CHAS. S.	Okmulgee
MATHENEY, J. C.	Okmulgee
MING, C. M.	Okmulgee
MITCHENER, W. C.	Okmulgee
McKINNEY, G. Y.	Henryetta
NELSON, J. P.	Beggs
RANDEL, D. M.	Okmulgee
RANDEL, H. O.	Okmulgee
RAINS, H. L.	Okmulgee
REMBERT, J. C.	Okmulgee
ROBINSON, J. C.	Henryetta
RODDA, E. D.	Okmulgee
SIMPSON, N. N.	Henryetta
STARK, W. W.	Okmulgee
TORRANCE, L. B.	Okmulgee
WALLACE, V. M.	Morris
WIDENER, DEAN	Okmulgee
WATSON, W. S.	Okmulgee
WATSON, F. S.	Okmulgee
VERNON, W. C.	Okmulgee

## OSAGE

AARON, W. H.	Pawhuska
ALEXANDER, E. T.	Barnsdall
BAYLOR, R. A.	Fairfax
CARMICHEAL, M. M.	Osage
CATON, C. N.	Wynona
COLLEY, T. J.	Hominy
DALY, J. F.	Pawhuska
DOZIER, B. E.	Shidler
GOVAN, T. P.	Pawhuska
GUILD, C. H.	Shidler
HEMPHILL, G. K.	Pawhuska
HEMPHILL, PAUL H.	Pawhuska
KARASEK, M.	Shidler
KEYS, E. C.	Shidler
LIPE, E. N.	Fairfax
LOGAN, C. K.	Hominy
RAGAN, T. A.	Fairfax
RUST, M. E.	Pawhuska
SMITH, R. O.	Hominy
SULLIVAN, B. F.	Barnsdall
SUMMERS, H. L.	Public Square, Marion, Ill.
WALKER, G. I.	Hominy
WALKER, ROSCOE	Pawhuska
WILLIAMS, C. W.	Pawhuska
WORTEN, DIVONIS	Pawhuska

## OTTAWA

AISENSTADT, E. ALBERT	Picher
BARRY, J. R.	Picher
BUTLER, V. V.	Picher
CANNON, R. F.	Miami
CONNELL, MATT A.	Picher
COLVERT, GEO. W.	Miami

COOTER, A. M.	Miami
CUNNINGHAM, P. J.	Afton
CRAIG, J. W.	Miami
DeARMAN, M. M.	Miami
DeTAR, GEO. A.	Miami
DOLAN, W. M.	Picher
GRAY, CHAS. M.	Miami
HAMPTON, J. B.	Commerce
HELM, F. P.	Board of Health, Topeka, Kans.
HUGHES, A. R.	Wyandotte
JACOBS, J. C.	Miami
JACOBY, J. S.	Commerce
KERR, WALTER C. H.	Picher
KITCHEN, JOHN C.	Picher
LANNING, J. M.	Picher
LIGHTFOOT, J. B.	Miami
McNAUGHTON, G. P.	Miami
MILLER, H. K.	Fairland
MOON, J. T.	Miami
PHILLIPS, ISAAC	Picher
PINNELL, GENERAL	Miami
RALSTON, B. W.	Commerce
RITCHEY, HENRY C.	Picher
RUSSELL, RICHARD	Picher
SHELTON, B. W.	Miami
SMITH, W. B.	Miami
WORMINGTON, F. L.	Miami

## PAWNEE

BARKER, L. C.	Ralston
BAUM, E. ELDON	Jennings
BEITMEN, C. E.	Skedee
BROWNING, R. L.	Pawnee
HETHERINGTON, L. C.	Pawnee
JONES, R. E.	Pawnee
LeHEW, ELTON W.	Pawnee
LeHEW, J. L.	Pawnee
MARX, R. L.	Pawnee
YOUNG, C. W.	Cleveland
SADDORIS, M. L.	Cleveland
ROBINSON, E. T.	Cleveland

## PAYNE

ADAMS, JAMES E.	Cushing
BASSETT, C. M.	Cushing
BEACH, C. H.	Glencoe
CLEVERDON, L. A.	Stillwater
DAVIS, BENJ.	Cushing
DAVIDSON, W. N.	Cushing
FRIEDEMANN, P. W.	Stillwater
HARRIS, E. M.	Cushing
HERRINGTON, D. J.	Cushing
HOLBROOK, R. W.	Perkins
LEATHEROCK, R. E.	Cushing
LOVE, T. A.	Ripley
MANNING, H. C.	Cushing
MARTIN, EMMETT O.	Cushing
MARTIN, JOHN F.	Stillwater
MARTIN, JOHN W.	Cushing
MITCHELL, L. A.	Stillwater
RICHARDSON, P. M.	Cushing
ROBERTS, R. E.	Stillwater
SEXTON, C. E.	Stillwater
SMITH, A. B.	Stillwater
STRAHN, EVA E.	Stillwater
WAGGONER, R. E.	Stillwater
WALTRIP, J. R.	Yale
WILHITE, L. R.	Perkins

## PITTSBURG

BARTHELD, F. T.	McAlester
BARTON, V. H.	McAlester
BAUM, F. J.	McAlester
BRIGHT, J. B.	Kiowa
BRONSON, C. J.	McAlester

BUNN, A. D.	Savanna
BUSSEY, H. N.	2043 N. W. 23rd St., Okla. City
CARLOCK, A. E.	Hartshorne
DAVIS, J. E.	McAlester
DORROUGH, JOE	McAlester
GEORGE, L. J.	Stuart
HAILEY, W. P.	Haileyville
HARRIS, C. T.	Kiowa
JOHNSTON, J. C.	McAlester
KIES, B. B.	N. McAlester
KILPATRICK, G. A.	McAlester
KUYRKENDALL, L. C.	McAlester
LEWALLEN, W. P.	Canadian
MILLER, F. A.	Hartshorne
MUNN, J. A.	McAlester
MCCARLEY, T. H.	McAlester
NORRIS, T. T.	Krebs
PALMER, CLARA	McAlester
PARK, J. F.	McAlester
PEARCE, C. M.	State Capitol Bldg, Okla. City
PEMBERTON, R. K.	McAlester
RAMSAY, W. G.	Quinton
RICE, O. W.	McAlester
SAMES, W. W.	Hartshorne
SHANKLE, H. D., 410 E. St., Wash'ton Ct. H., Ohio	
SHULLER, E. H.	McAlester
WAIT, W. C.	Clinton
WILSON, HERBERT A.	McAlester
WELCH, A. J.	McAlester
WILSON, McCLELLAND	McAlester
WILLIAMS, C. O.	McAlester
WILLOUR, L. S.	McAlester

## PONTOTOC

BRECO, J. G.	Ada
BRYDIA, CATHERINE T.	Ada
BURROWS, L. I.	Ada
CANADA, E. A.	Ada
CUMMINGS, I. L.	Ada
DAWSON, B. B.	Ada
DEAN, W. F.	Ada
GULLATT, E. M.	Ada
HOLLOWAY, T. R.	Stonewall
LEWIS, E. F.	Ada
LEWIS, M. L.	Ada
MATTISON, WM. L.	Ada
McKEEL, SAM A.	Ada
McNEW, M. C.	Ada
MILLER, O. H.	Ada
MOREY, JOHN B.	Ada
NEEDHAM, C. F.	Ada
PETERSON, WM. G.	Ada
ROSS, S. P.	Ada
RUTLEDGE, J. A.	Ada
SEABORN, THOS. L.	Roff
SUGG, ALFRED R.	Ada
THRELKELD, W. R.	Ada
WELBORN, O. E.	Ada
WEBSTER, M. M.	Ada

## POTTAWATOMIE

ANDERSON, R. M.	Shawnee
APPLEWHITE, G. H.	Shawnee
BAKER, N. A.	Shawnee
BALL, W. A.	Wanette
BAXTER, G. S.	Shawnee
BLOUNT, W. T.	Maud
BROWN, R. A.	Prague
BYRUM, J. M.	Shawnee
CAMPBELL, H. G.	Shawnee
CARSON, F. L.	Shawnee
CULBERTSON, R. R.	Maud
CULLUM, J. E.	Earlsboro
CORDELL, U. S.	McComb
FORTSON, J. L.	Tecumseh
GALLAHER, F. C.	Shawnee

GALLAHER, W. M.	Shawnee
GASTON, JOHN I.	Shawnee
GILLICK, D. W.	Shawnee
HUGHES, J. E.	Shawnee
HUGHES, H. E.	Shawnee
ISVEKOV, V. G., 308 St. Nat. Bk. Bldg., Houston, Tx.	
KAYLOR, R. C.	McCloud
KEEN, FRANK M.	Shawnee
MATHEWS, W. F.	Tecumseh
McADAMS-WILLIAMS, ALPHA	Shawnee
McFARLING, A. C.	Shawnee
NEWLIN, F. P.	Shawnee
PARAMORE, C. F.	Shawnee
RICE, E. E.	Shawnee
ROWLAND, T. D.	Shawnee
ROYSTER, J. H.	Wanette
SHIVERS, ERAINE E.	St. Louis, Okla.
STEVENS, W. S., 315 Fed. Bldg., Okla. City	
STOOKSBURY, J. M.	Shawnee
TURNER, JAMES H., Cumberland Hosp., New York	
WAGNER, H. A.	Shawnee
WALKER, J. A.	Shawnee
WALKER, J. E.	Shawnee

## PUSHMATAHA

BALL, ERNEST	Sulphur
BURNETT, J. A.	Waldron, Ark.
CONNALLY, D. W.	Nashoba
HUCKABAY, B. M.	Antlers
JOHNSON, H. C.	Antlers
KIRKPATRICK, J.	Tuskahoma
LAWSON, JOHN S.	Clayton
PATTERSON, E. S.	Antlers

## ROGERS

ANDERSON, F. A.	Claremore
ARNOLD, A. M.	Claremore
BASSMAN, CAROLINE	Claremore
BESON, C. W.	Claremore
BUSHYHEAD, J. C.	Claremore
COLLINS, B. F.	Claremore
HAYS, W. F.	Claremore
HOWARD, W. A.	Chelsea
JENNINGS, K. D.	Chelsea
MASON, W. S.	Claremore
MELOY, R. C.	Claremore
NELSON, D. C.	Claremore

## SEMINOLE

BATES, C. W.	Seminole
BATES, J. A.	Seminole
BLACK, W. R., Route No. 3, Seminole	
BRIGGS, T. H.	Wewoka
CHAMBERS, C. S.	Seminole
DAVIS, JOHN	Seminole
DEATON, A. N.	Wewoka
GIESEN, A. F.	Konawa
GRIMES, J. P.	Wewoka
HARBOR, J. N.	Seminole
HAMPTON, K. P.	Seminole
HARRISON, T. F.	Wewoka
HEFFERNON, C. A.	Seminole
HUDDLESTON, W. F.	Konawa
KNIGHT, W. L.	Wewoka
LONG, W. J.	Konawa
MARTIN, W. S.	Wewoka
MOSHER, D. D.	Seminole
McALISTER, F. R.	Seminole
McGOVERN, J. D.	Wewoka
MILLS, J. T.	Sasakwa
MILLS, N. W.	Snomac
PACE, L. R.	Seminole
PRICE, J. T.	Seminole
SCOTT, THOS. A.	Bowlegs



SHULER, A. C.	Seminole
STEPHENS, A. B.	Seminole
STEVENS, C.	Seminole
THROGMORTON, H. B.	Seminole
TURLINGTON, M. M.	Seminole
VAN SANDT, G. B.	Wewoka
VAN SANDT, M. M.	Wewoka
WALKER, A. A.	Wewoka
WARE, T. H.	Seminole
WHITTLE, C. C.	Wewoka

## SEQUOYAH

CHEEK, J. A.	Sallisaw
JONES, S. B.	Sallisaw

## STEPHENS

BARTLEY, J. P.	Duncan
BREWER, J. R.	Marlow
BURNETT, B. H.	Duncan
CAMPBELL, JOHN D.	Duncan
CARMICHAEL, J. B.	Duncan
CHUMLEY, C. P.	Duncan
GARRETT, S. S.	County Line
HARRISON, C. M.	Comanche
IVY, W. S.	Duncan
KING, E. G.	Duncan
LINDLEY, E. C.	Duncan
LINZY, J. H.	Comanche
LONG, D.	Stephens
McLAIN, W. Z.	Marlow
McMAHAN, A. M.	Duncan
NIEWEG, J. W.	Duncan
OVERTON, L. M.	Shawnee
PATTERSON, J. L.	Duncan
PRUITT, C. C.	Comanche
RICHARDSON, R. W.	Comanche
SALMON, W. T.	Duncan
SMITH, L. P.	Marlow
TALLEY, C. N.	Marlow
THOMASSON, E. B.	Marlow
WEEDN, A. J.	Duncan
WILLIAMSON, S. H.	Duncan

## TEXAS

HAYES, R. B.	Guymon
HEADY, ELMER E.	Goodwell
LEE, DANIEL S.	Guymon
RISEN, W. J.	Hooker
REED, PAUL	Texhoma
SMITH, MORRIS	Guymon
THURSTON, HARRY E.	Texhoma

## TILLMAN

ALLEN, C. C.	Frederick
ARRINGTON, J. E.	Frederick
BACON, O. G.	Frederick
CHILDERS, J. E.	Tipton
COMP, G. A.	Manitou
DAVIS, W. W.	Davidson
FISHER, R. L.	Frederick
OSBORN, J. D., Jr.	Frederick
REYNOLDS, J. C.	Frederick
SPURGEON, T. F.	Frederick

## TULSA

ALLEN, V. K.	Medical Arts Bldg.
ALLISON, T. D.	Sand Springs
AMENT, C. M.	305 Ritz Bldg.
ARMSTRONG, O. C.	Medical Arts Bldg.
ATCHLEY, R. Q.	Medical Arts Bldg.
ATKINS, PAUL N.	Medical Arts Bldg.
BARHAM, J. H.	314 Daniels Bldg.
BEESELEY, W. W.	Medical Arts Bldg.
BEYER, J. W.	501 Palace Bldg.
BILLINGTON, J. JEFF	Medical Arts Bldg.

BLACK, H. J.	Medical Arts Bldg.
BOLTON, J. F.	Medical Arts Bldg.
BRADFIELD, S. J.	Medical Arts Bldg.
BRADLEY, C. E.	Medical Arts Bldg.
BRASWELL, JAMES C.	Medical Arts Bldg.
BROGDEN, J. C.	Medical Arts Bldg.
BRANLEY, B. L.	Medical Arts Bldg.
BROOKSHIRE, J. E.	313 Ritz Bldg.
BROWNE, HENRY S.	Medical Arts Bldg.
BRYAN, W. J., Jr.	Medical Arts Bldg.
CALHOUN, C. E.	Sand Springs
CALHOUN, WALTER H.	1010 Daniels Bldg.
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## THE STATUS OF LUNG COMPRESSION IN THE TREATMENT OF PULMONARY TUBERCULOSIS\*

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Changes in the treatment of pulmonary tuberculosis have occurred so rapidly during the past few years that we deem it valuable to review some of the underlying principles, and to evaluate some of the factors which portend to the betterment of many who suffer with this disease, and who are otherwise doomed to a short life of invalidism.

As evidence of a greatly increased knowledge and skill in present day treatment of pulmonary tuberculosis as compared with that of twenty years ago, one need only to visit a well organized and well staffed tubercular sanatorium. This increased knowledge and skill has been greatly augmented both in development and application through a close cooperation of the internist and surgeon in coordinating and utilizing all agents and measures which are known to effect a better service.

That physiological rest is now, as in the past, one of our most effective methods of treating pulmonary tuberculosis, most of us agree; but in the light of our present day knowledge upon this subject we find ourselves no longer confined to one form of treatment.

Surgery is becoming increasingly more useful in its application in the treatment of pulmonary tuberculosis, but in any form of application it should properly be considered only as an adjunct in the treatment.

No conflict of interest between surgeon and phthisiologist will obtain when all are

striving for facts, and if conflict of opinion as to eligibility of a patient as a surgical risk obtains, final judgment should then be passed, with some rare exceptions, by the phthisiologist, for it is he who has made continuous study and observation upon which his opinions are based.

It appears quite obvious that a careful study be given to the selection of tuberculous patients for any form of lung compression, and that mature judgment is required in properly selecting the form of collapse indicated in, and adapted to the treatment in a given case. If we allow our enthusiasm instead of conservative judgment to guide us in this great responsibility, we will too often meet with humiliation, if not disaster. We should not deem it our right or privilege to offer surgical compression of the lungs only for the reason that all other forms of treatment have failed, but indications for such treatment should be based upon carefully assembled evidence which offers good prospects for both immediate surgical risk, and a continued physical improvement.

With the knowledge that recovery or healing of a tuberculous process in the lungs is by fibrous tissue changes producing scar, and that this process is promoted and facilitated by rest and better tissue contact, an ideal surgical procedure would be one which, after healing, would offer the best opportunity for return function. Artificial pneumothorax is more uniformly adapted as a revocable procedure, and is by reason of less hazard and easy application, and as measured by results, the procedure of choice. The more radical surgical procedures should be reserved for cases that are not adapted for this form

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of treatment because of adhesive bands, or those who do not respond favorably after sufficient treatment by artificial pneumothorax.

In anticipation of any form of lung compression we should estimate mobility of mediastinum, and the vital capacity of the lungs. These factors are not so vital in pneumothorax as in the more permanent forms of compression, because certain of the bad results which might follow can be more easily remedied.

In view of the fact that wounds, ulcers, and like diseased processes, whether tubercular or otherwise, heal by the formation of fibrous tissue, cure of cavitations in the lungs must take place by cicatrization of tissue lost through the destructive process. In view of the foregoing statement an indication of prime importance in the more permanent types of compression—as thoracoplasty—is that a patient show that natural ability to resist by the formation of fibrous tissue which terminates in contracting scar. Experience has taught us that fibrosis takes place more rapidly when inflammatory tissues are immobilized, and it is fundamental that tissue contact is very important, if not necessary, for healing by cicatrization. It would therefore appear important that we apply, when indicated, such procedures as will produce atelectasis and other requirements which promote fibrosis by processes which, through pressure and a sclerosing effect upon blood and lymph vessels, limit the efferent flow of infections to lung tissue not actively involved. Scar tissue is the product of nature's successful effort in healing, and with its property of contracting produces physical signs and x-ray findings which are of great importance in determining a patient's resistance as well as the type of compression, if indicated.

With statistics showing that 80 to 90 per cent of tuberculous patients after reaching the stage of cavitation are dead within six years, it should occur to us upon making a diagnosis of cavitation that we should consider some form of lung compression in the form of artificial pneumothorax, phrenicectomy, or thoracoplasty.

It is probably rare, if ever, to find a contralateral lung to one with advanced tuberculosis which has not at some time and in some degree been infected. But it is of the greatest importance in considering any major form of compression that

the condition of the contralateral or good lung is such as to withstand the burden of any procedure under advisement.

While the more conservative state that 3 to 8 per cent of patients suffering from pulmonary tuberculosis will be benefited by some form of lung compression, others place the percentage at or above 40 per cent. O'Brien believes that every patient suffering with unilateral tuberculosis should be given some form of lung compression. Dr. Jamie Dickie states that practically every terminal case of pulmonary tuberculosis was at one time a suitable case for pneumothorax, phrenicectomy or thoracoplasty.

Roloff reports the percentage of clinical cures as based upon length of time of compression by pneumothorax as follows: 253 patients compressed (by pneumothorax) less than one-half year, 9.1 per cent clinical cures; 88 patients compressed from one-half to one year, 22.7 per cent clinical cures; 120 patients compressed one to two years, 50 per cent cures; 68 patients treated over two years, 68.5 per cent clinical cures. With the percentage of clinical cures in so sizable a series ranging from 9.1% to 68.5%, the length of time compression is obtained is most vital, and proves the fallacy of the lack of control and cooperation of such patients.

Relative to the influence of age upon the results of treatment by artificial pneumothorax, Roloff reports 771 cases with clinical cures ranging from 32% cures in patients from 7 to 15 years, with gradual reduction in percentage of cures to 24% at or above 45 years. The fact that better results are obtained by pneumothorax treatment in young patients is not accounted for wholly by the factors of youth and vitality, but upon the premise that it is an early case, and has not yet developed complicating pleural adhesions and fibrotic tissue changes which occur more often and are further developed in cases who have been afflicted longer. Such complications preventing a complete collapse and rest of disease process in lungs. The application of artificial pneumothorax is greatly handicapped when fibrotic tissue and adhesions are so abundant as to block the intrapleural space, or strong bands by their location prevent proper collapse. As fibrous tissue is formed through nature's efforts to resist and fortify against invasion, it is logical that adhesions occur more often and more abundantly about the location of active lesions, and particularly

so when the diseased process is near the surface. Comparative results of pneumothorax treatment in cases with and without adhesions as reported by Dr. Ralph C. Matson, in a series of 850 cases: cases with satisfactory collapse, adhesions not preventing closure of cavity, clinically cured, 48%; arrested, 20%; dead, 21%. Cases where adhesions prevented satisfactory collapse, clinically cured, 13%; arrested, 13%; dead, 50%.

Since the advent of the thoracoscope, certain types of adhesions may be severed by electric cautery thereby reclaiming a group of patients from an unsatisfactory to a satisfactory collapse. The patient's contralateral lung and general tolerance must be such as to offer a good prospect for recovery from the operation to justify undertaking pneumolysis. Intra-pleural space must be of sufficient size to permit operation. This operation is not justified until it is proven that the adhesions are preventing collapse and after pneumothorax treatments over a sufficient length of time has proven unsatisfactory. The adhesions must be of suitable type for operation. Adhesions with probability of containing lung tissue constitute a grave hazard. Among lesser indications for this procedure is pain from traction, uncontrolled cough, torsion of blood vessels and altered position of heart from traction. While this procedure gives splendid results in a few well selected cases, its application is quite limited because very few cases with adhesions present the type of adhesions to justify this operation.

Opinions relative to the degree of compression by artificial pneumothorax at present are controversial. A considerable group who believe that selective collapse gives quite as good results as a more complete compression and obviate symptoms which occur more often in the more complete forms. Some advantages claimed for selective collapse are: That the clinical results are as good, that only diseased tissue is compressed, little if any displacement of mediastinum, less heart symptoms as: dyspnea, palpitation, tachycardia, less pain, temperature, coughing and vomiting. Also that the burden of the contralateral lung is lessened by reason that the patient may still use that portion of compressed lung as additional vital capacity, with a greater margin of safety. And further claim that inhaled air in partial collapse allows less diseased lung tissue, with its greater capacity to expand, act as a splint forcing a larger volume of air to area

of cavitation for better compression. Also that there is less danger of spontaneous pneumothorax and greater prospect for return function with an arrested process.

On the opposite side of the controversy are a large group who believe that a more complete collapse is a better treatment and in view of end results, a conservative treatment. Matz reports 573 cases treated by pneumothorax with more satisfactory results from complete collapse and a lower death rate. Matson and his associates state that progression occurs in the opposite lung three times as often with only partial collapse. Disadvantages in selective collapse are: necessity for more frequent refills and time consuming effort required to determine time for same, increased liability to infection, and air embolism from more frequent refills, that it is not possible to foretell in a given case whether collapse will be selective, and that it is not adapted to cases with adhesions or dense sclerotic tissue, not adapted to lesions at periphery of lung. Selective collapse is better adapted to the early cases or those in exudative stage and lesions in upper portion of lung which are free from adhesions and sclerotic tissue changes. It is particularly adapted in bilateral pneumothorax.

Pleural effusion is the most common complication in pneumothorax treatment. Its frequency as reported by various authors ranges from 25% to 100% of cases. Minimal amounts of effusion are probably oftener not detected. If it occurs without infection, it should not be considered serious, but empyema is always a grave problem. Perforation, whether by tearing with too much compression upon adhesive bands, or by accidental needle puncture should always be considered as serious. Open and closed treatment of empyema will not be discussed at length, but it is my opinion that if intrapleural contents do not show virulent infection, closed treatment should be adhered to, but with virulent infection, high temperature, loss of strength and a general decline, free open drainage by rib resection is generally indicated.

The benefits accomplished by operations upon the phrenic nerve in the treatment of pulmonary tuberculosis are by paralyzing the half of the diaphragm corresponding to the diseased lung, and serves only in aiding nature in its effort to secure rest, limit motion and facilitate tissue con-



tact by relaxation and by limiting space. While phrenic nerve operations are recognized among the splendid contributions in the application of surgery in the treatment of pulmonary tuberculosis, its benefits are not as great as anticipated by the more enthusiastic proponents of this procedure. Because of its ease of application and little immediate operating hazard, abuses may occur more often in the selection of cases, which might reflect an incorrect statistical disadvantage. Crushing the phrenic nerve producing a temporary paralysis lasting 3 to 6 months is now often the choice over phrenicotomy or phrenicectomy. Crushing has the advantage of return function in healed lesions. Phrenic nerve operations should be considered in any case in which pneumothorax and thoracoplasty are not applicable. It is indicated in lesions of lower lobe particularly when the lung is attached to the diaphragm by adhesions and fibrous tissue cleavage. It is definitely indicated to supplement pneumothorax when compression is incomplete because of adhesions. Benefits are greater in solitary cavitation, and is often of benefit in the process of lung expansion following compression, and will often aid in controlling hemorrhage, but it is not of material aid following thoracoplasty. Phrenic nerve operations alone do not often completely relieve all symptoms and statistical reports on percentage of cases treated who make any degree of improvement are not too encouraging. The number of cases that reflect any degree of improvement range from 24% to 50%. It would therefore appear that the best results from phrenic nerve operations will obtain when used to supplement other procedures, or when other procedures are not applicable.

Oleo thorax, or the instillation of preparations of oil in the pleural cavity, was first performed by Bernou in 1922, and the validity of its usefulness is subject at present to much controversy. While its use in America has been limited, it has been used more extensively in France and other European countries. Indications for oleo thorax as stated by Matson are: treatment of pneumothorax empyema; when early oblitative pneumothorax prevents satisfactory collapse by air pressure; to reestablish collapse when not maintained by air inflation, and has a probable value in stiffening the mediastinum, and as a prophylactic against empyema in caseous pleuritis. Contraindications: in pleuro-pulmonary fistulas with large openings, in

ordinary sero-fibrinous exudates complicating pneumothorax; never to substitute for pneumothorax therapy, contra-indicated also where too rapid gas absorption leaves unsatisfactory collapse. Paraffine and olive oil are used as a base to which some antiseptic may be added. Gomenol (a volatile oil) with antiseptic properties is more generally added to base, while in some instances the base without addition of any antiseptic is used. Matson stresses the necessity of small doses of paraffine or paraffine with 1% gomenol injected at time of air refills into pleural cavity as test for reactions before massive doses are given, and that tests be made at refilling time for exudate in pleural cavity. Intrapleural reactions are manifested as an exudate and pain. Oil replacements are very small by the end of one year, because of decreased absorption. Bernou believes the greatest benefit from oleo thorax is not caused by its antiseptic properties, but that it acts as an irritant, producing an inflammatory reaction in the pleura, characterized first by congestion and followed by an influx of polymorphonuclear leucocytes, and that during the destructive process of the polymorphonuclear leucocytes a proteolytic ferment is formed which liquifies the products of caseation and thereby cleanses the pleural wall. Matson reports 50 cases of disinfection oleo thorax with 60% satisfactory results, maintaining collapse and empyema cleared up. Of the 20 cases of failures, pleuro-cutaneous fistula complicated in 4 cases, pleuro-pulmonary fistula in 4 cases, reformation of purulent exudate in 4 cases, and disinfection failed in 8 cases. The same author reported 50 cases treated by oleo thorax for compression and inhibition with 50% satisfactory and 50% unsatisfactory results.

#### INDICATIONS FOR EXTRAPLEURAL THORACOPLASTY

Fibrosis characterizes only the productive type of pulmonary tuberculosis, and is probably the greatest single factor pointing to the patient's resistance, and a favorable acceptance as a surgical risk. Where fibrosis has progressed to the point where the scar, by its contracting, so displaces the mediastinum, heart and trachea as to by such traction produce cyanosis, dyspnea and tachycardia, thoracoplasty by counter pressure offers the greatest relief by replacing these vital organs. While it is important that the contralateral lung be free from infection, there should not be activity or progression present in either

lung. A sound myocardium is very essential. We should exclude active laryngeal lesions, which indicate progression in the lung. Mediastinal fixation is of the greatest importance in avoiding free shifting of the lung and heart flutter, which is often accompanied by too great a reduction in vital capacity. An acceptable risk for thoracoplasty should imply that the patient's physical resistance is such as to justify them being classified as a fairly good risk for other major operations. Young patients with early lesions who lack fibrotic tissue changes, who lack time and the conversion from an exudative to the productive process, are generally poor risks. If the blood sedimentation test, as many believe, will with reasonable accuracy and uniformity indicate resistance and prognosis in pulmonary tuberculosis it should be of value in determining surgical risks.

Statistics show that women are better operative risks than men, and that thoracoplasty on the left side is much safer. Most phthisiologists and surgeons agree that thoracoplasty should be done in multiple stages. The number of stages would depend upon the extent of collapse determined upon, the ease or difficulty of its application, and the patient's physical condition during operation. We should keep within the bounds of safety, being especially cautious when operating the right chest. The interval between stages, the patient's physical condition permitting, is usually two to three weeks, but the succeeding stage should be done in advance of such amount of new bone formation as will prevent proper collapse. New bone formation may be retarded by removing external or accessible periosteum, but is not of sufficient importance to warrant the hazard of tearing the pleura in attempt at removing the underlying periosteum. After obtaining the full results from a completed thoracoplasty, new bone formation is desired for its stabilizing effect.

There is diversity of opinion as to whether thoracoplasty should begin at the apex or base. There are some who believe extensive first stage thoracoplasty over the apex, by producing greater collapse, has the additional dangers of sudden interference with aeration and sudden loss of vital capacity, and is of greater danger in cases with an unsound myocardium. The experience of many surgeons does not coincide with the above statements. Reasoning from the point of view of selective collapse, thoracoplasty should

begin over the location of cavitation. Since many phthisiologists and surgeons at present agree that many cases with cavitation confined to apical portion of lung do not require complete thoracoplasty, and in some cases the resection of only four or five ribs, for satisfactory compression and results, it appears very logical that thoracoplasty in these cases should begin at apex.

#### THE LENGTH OF RIB SEGMENTS

There is little, if any, dissension to the principle that a satisfactory thoracoplasty requires resection of such lengths of rib segment, such number of ribs, and so situated as to produce that amount of relaxation and compression necessary to properly close cavities and meet other requisites commonly accepted as a satisfactory result, but there is still much diversion of opinion regarding the nature and extent of procedure required. These opinions range from minimal segments excluding first rib to complete removal of all ribs excepting the twelfth. Without discussing this point at length, it would appear more rational to remove such length and such number of ribs and so situated as to give the required relaxation and compression. As more experience is acquired, more stress is placed upon removing posterior segments well back to the transverse processes. B. P. Potter, in a recent article, points out that rib resection is done primarily to uncover cavities, and that cavities are generally found in the paravertebral gutter. Removal of the first rib is of great importance and should always be removed, except in cases where added trauma or an unusual situation constitute an unwarranted hazard.

In the final analysis of progress made in the treatment of pulmonary tuberculosis during the last decade, the greatest benefits come through procedures which supplement "Time Honored Rest" and better tissue contact which facilitate and promote fibrosis, nature's great weapon for healing and cure.

It appears that if students in medical schools and as interns could by a more strenuous and thorough training become more proficient in diagnosing pulmonary tuberculosis, it would add knowledge, confidence and refinement in their approach at solving other difficult problems in the chest, as well as bring tubercular patients to a well appointed service



before they are doomed to a short life of suffering and invalidism.

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## DIFFERENTIAL DIAGNOSIS OF STONES IN THE UPPER URINARY TRACT\*

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One thinks of the diagnosis of stone in the upper urinary tract as a very simple matter and there is no doubt that in the majority of cases it is. The attacks of nephrolithiasis with pain in the costovertebral angle radiating to the groin and a urine pull of blood present very few problems. We have but to make a flat plate and an intravenous pyelogram to arrive at a definite diagnosis of stone. However, I believe that even in these cases our diagnosis is not complete until we have gone further and tried to explain the presence of the stone, i. e., why it formed.

Briefly stated, the chief causes of stone, so far as we understand them, are obstructions to the urinary outflow, infection, and the metabolic factor, be it vitamin A, deficiency, or whatnot. Usually two or perhaps all three factors are involved in the same case and in our diagnosis we should include whether obstruction and infection are present, and obstruction usually is, and whether we think that dietary errors are responsible. If the surgeon operating for stone will keep these things in mind and plan his operation and after treatment accordingly he will have fewer recurrences and all around better results. The greater number of general surgeons consider these factors not at

all, but remove the stone and tell the patient he is cured, which is too often not the case.

However, the purpose of this paper is to point out a few procedures used by us in the actual proving that a shadow on the x-ray plate is or is not a stone in the urinary tract. When a patient presents himself for diagnosis of a chronic abdominal pain or pain elsewhere which might arise in the kidney one of the first things, in my estimation, that should be done is to take a flat plate or K. U. B. plate. This is particularly true if there are any urinary symptoms. Quite frequently a shadow is found which might or might not explain the pain according to whether it is in the kidney, gall bladder or elsewhere. To make a definite diagnosis of nephrolithiasis we have found the following procedures helpful:

If a shadow appears in the right kidney region in the flat plate we often turn the patient over and take a plate in the ventral position. If the shadow is a kidney stone it will be slightly smaller in the dorsal than in the ventral plate, while if it is a gall stone the reverse will be true. This procedure is helpful but not entirely reliable as a movable kidney may drop forward and produce a shadow of a kidney stone which is the same size or even smaller in the ventral than in the dorsal plate.

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If this should occur a lateral plate will often be of help for if the stone is large enough to be seen in such a plate it will either be well out in front of the bodies of the vertebra, in which case it is definitely a gall stone, or back over the vertebral bodies, in which case it is a kidney stone. One must keep in mind that calcified glands can occur in either position.

The gall bladder visualization test is of help where the gall bladder fills. The pyelo-ureterogram is of course the most useful of all procedures. I still do a retrograde pyelogram in most cases and my technique is to take three plates: one with the catheters in place, one with both pelvises injected, and the last a pyelo-ureterogram. We usually develop the plates as we go and look at the one before the next one is taken. Thus we are able to repeat one if it is not satisfactory or we are able to vary our procedure according to what develops. (I have found it most pleasing to be my own roentgenologist as far as reading the plates is concerned and likewise a thorough understanding of the cystoscopic and pyelographic findings have been most helpful to me in my surgery. I do not approve of the non-surgical urologist.)

Having developed the plates as we go, we have several times found it helpful to either take a sitting plate or a lateral pyelogram. In the sitting plate if the kidney is movable and there is a stone in it, the shadow moves downward with the kidney. In the lateral pyelogram a shadow which in the ordinary pyelogram seemed to overlie the calyx will be proved to be in it or outside the kidney area.

In a case where there is a shadow in the ureteral region, and there is the slightest question of its not being a ureteral stone, a catheter may be passed to the kidney and an ordinary flat plate taken. If the shadow overlies the catheter a second plate may be taken in an oblique position. If the shadow overlies the catheter it is undoubtedly a stone, but if it has moved away from the catheter it is most likely a phlebolith or calcified gland, but it is safer always to take a ureterogram for there is the possibility of a greatly distended ureter in which the stone rolls about freely.

Another point to which I wish to call attention is that in taking ureterograms and pyelograms care should be taken not to inject air as an air bubble may be mistaken as x-ray negative stone. If such a shadow does appear it is always best to

repeat the ureterogram to definitely prove whether the negative shadow does or does not remain constant.

We have not attempted to consider the cystoscopic procedures employed in the diagnosis of stone, but have confined ourselves to x-ray procedures.

The following are brief resumes of some interesting cases:

Case 1. Mr. J., a white male, 42 years of age, came in complaining of dysuria. He gave a history of no hematuria, no stone attacks, but dysuria of one year's duration. A flat plate showed a large round shadow in the right upper quadrant of the abdomen. A pyelogram showed the same shadow over the lower calyx of the right kidney. A ventral plate at a later date showed the shadow smaller than in the dorsal plate and a lateral plate showed it well anterior to the bodies of the vertebrae.

Diagnosis: Cholelithiasis.

Case 2. Mr. M., white male, 48 years of age, came in complaining of pyelitis of several years' duration. Flat plate showed a lamellated shadow in region of right kidney. Retrograde pyelogram showed the shadow to be overlying the lower calyx of the kidney but the calyx could apparently be seen through it. Intravenous pyelogram gave the same findings. A semilateral plate was taken with a ureteral catheter in place and this showed the shadow near the ureteral catheter. A semilateral pyelogram shows the shadow in the lower calyx of the kidney.

Diagnosis: Nephrolithiasis.

Case 3. Mr. M., white male, 41 years of age, came in complaining of pain in the right kidney region and there was extreme tenderness and rigidity in this area. He had a temperature of 100.5 degrees F. and a white count of 16,000. Patient had been operated before for nephrolithiasis at which time one small stone could not be found. A flat g. u. plate showed a large lamellated stone in the right kidney area. Cystoscopic examination proved this stone to be impacted at the pelvo-ureteral junction and it was removed immediately. We show this plate because the stone has the typical appearance of a large gall stone.

Case 4. Mr. B., white male, age 38, sent into U. S. V. Hospital No. 90, to verify the absence of a kidney supposed to have been removed during the World war. He complained of dysuria and bladder showed marked chronic inflammation. No. 6 French ureteral catheter passed easily to both kidneys and urine was clear. The flat plate with the catheter in place showed a small shadow overlying the shadow of the catheter and opposite the intervertebral disc between the third and fourth lumbar vertebra. A pyelogram with some regurgitation of the media into the ureter showed the shadow apparently not wholly included in the ureter and the ureterogram showed no obstruction to the ureter as would be expected in a case of stone.

Diagnosis: Rheumatic exostosis, detached from vertebra.

Case 5. Mrs. J. P., white female, age 24, came in complaining of pain in the left lower quadrant. No urinary complaint. Flat g. u. plate showed a shadow in region of lower third of left ureter. Cystoscopy was done and a catheter passed up the left ureter and another plate taken. In this plate the shadow overlaid the shadow of the catheter. A semilateral plate was then taken and the shadow moved several centimeters away from the shadow of the catheter. Ureterogram was normal.

Diagnosis: Calcification in pelvis, probably a phlebolith.



## ACUTE APPENDICITIS IN INFANTS AND CHILDREN\*

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If any excuse is required for the presentation of a paper on this subject, it may be found in such quotations as these, from the writings of physicians and surgeons of large experience: "After the first year of life it (appendicitis) is the most frequent acute surgical condition arising within the abdomen." (O. S. Wyatt, Minn. Med., March, 1933.)

Richardson of Boston says appendicitis is the "most common" surgical disease of children over one year of age, that at least 60% of all abdominal operations are for the treatment of this disease and that 95% of all cases of peritonitis are due to it. Hudson reported that of 51,790 admissions to the Boston Children's Hospital, 1378 were diagnosed as appendicitis—a ratio of 1 in 37 for admissions for all causes. Only tonsillectomies and inguinal hernias were more common. Hudson further contrasts 106 uncomplicated early cases with no deaths with 94 complicated late cases, among which were 12 deaths, a 12.6% mortality. Approximately similar figures can be duplicated by almost every hospital and surgeon of experience. I quote from Charles E. Farr, M.D.: "To our shame it must be said that the mortality of acute appendicitis in children, taken the country over, runs nearer 10 than 5%." (Surg. Clin., April 1935, page 339.)

For a disease which in most instances is so clear cut in its symptoms that they can be called classical, and which, taken early, is so safely amenable to treatment, this mortality is more than a "shame". It is almost criminal. It is the mortality of delay, delay in early diagnosis and proper treatment. The disease is of such a nature that the mortality and morbidity therefrom rise in inverse ratio to delay in diagnosis and operation. (For no physician of experience today questions the fact that early operation is the ideal treatment.)

Moreover, statistics seem to prove a steady increase in the death rate, so that the total mortality for all ages has risen to more than 18,000 deaths annually in

the registration area of the United States. It is a terrible mortality. According to the statistics of the Metropolitan Life Insurance Company which insures many thousand children, the death rate among all children also, up to the ages of 10 to 19, has shown a continuous upward trend. Among children between the ages of 4 to 19 the death rate from appendicitis ranges from fourth to third in the list of deaths from all causes. As a dealer of death among children, appendicitis ranks with influenza and pneumonia combined, with tuberculosis and diseases of the heart.

There are several reasons for this special deadliness of appendicitis in children, a brief review of which may here be pertinent. In children, the caecum and its appendix are situated relatively high in the abdomen, above McBurney's point and the anterior superior iliac spine. The appendix is relatively larger, both in length and diameter. Its opening into the caecum is wider and funnel shaped, thus, theoretically allowing more ready ingress of infection from the caecum. The layers are more delicate in structure, particularly the sub-mucous coat, and the lymphoid tissue is very abundant, increasing in amount from about the second to the twentieth years, during which period the prevalence and virulence of the bacillus coli increases also. This lymphoid tissue is subject to infection as is that in other parts of the body, and many cases of appendicitis follow tonsillitis and the acute infections and exanthemata. The blood supply is limited. The appendix circulation is dependent on a so-called terminal blood supply and end arteries. The meso appendix is thin and poorly supplied with blood vessels, which quickly become thrombosed in the presence of inflammation. These anatomical deficiencies make gangrene and perforation much more liable, perforation occurring from 1/3 to 1/2 more frequently in the younger children especially, than in adults. Further, in children the omentum is short and thin and so is less capable of limiting adhesions, closing perforations, and walling off infection. In a large per cent of children the appendix is retrocecal, from

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which area toxins seem to be more readily absorbed into the hepatic and general circulation.

Added to these "natural hazards" inherent in the structure of the child, is the all too frequent delay in diagnosis and treatment. As has been said, the morbidity and mortality rate rise in inverse ratio to the delay in diagnosis and operation. Procrastination here is not only the thief of time but the destroyer of life as well. If to delay is added the further insult of the giving of food and laxatives, the damage is immeasurably increased. Of a series of cases reported from the Samaritan Hospital of Philadelphia, 92.3% of the appendicitis patients who died of general peritonitis had had laxatives. So prone is rupture to follow purgation that it can be said purgation spells perforation, and vice versa. Bolling reported a series of 123 cases in which 60% of the children over 6 years required drainage. The Babies Hospital of New York City reported a series in which 90% had to be drained. Of 300 cases in the Boston Children's Hospital, Cutter had to drain 238, or 79.3%. Hudson had to drain 42 out of 71 cases, a total of 59.1%. Such figures are a sad commentary. Too many of our referred cases come "too late for early operation, and too early for late operation." The writer recalls only one referred case in years which came to him under 24 hours. Case after case could be cited in which the delay ranged from two to four and even five days. Far too often such waiting is fatal.

A brief consideration of the diagnosis of appendicitis in children may not be amiss. For our rule in this procedure it might be well to take the conventional railroad crossing sign: "Stop, Look, Listen!"—to which I would add "feel" and perhaps "think". The dictum of Deaver, "Look and act; do not watch and wait," is excellent advice. At the outset, we need to remember that in children the symptoms of this disease are perhaps less apt to be "classical" than in adults. Added to the difficulty of obtaining from the child a correct history of the onset and the chronological development of the symptoms, is the fact of common knowledge that children are more frequently subject to transient digestive and intestinal disorders. Hence the possible presence of appendicitis is too often overlooked. As Finney remarked: "In adults the tendency is to mistake something else for appendicitis; in children one is inclined to mistake appendicitis for something else." Hence in view

of the danger of mistaken or delayed diagnosis and treatment, we will do well to take for our guidance the wise words of Deaver: "In acute abdominal conditions the appendix should be considered first, last and always."

As a rule, pain is the first symptom of appendicitis in children, as in adults. In the consideration of this symptom it is of prime importance to secure from the child, if possible, or from the parents or attendants, a personal history of the child as well as a history of the immediate onset of the pain, its character and location, and the presence and chronological development of other symptoms. Not all children are cast in a common mold. Hence it would perhaps aid us by urging us to a more careful elicitation and weighing of symptoms, if instead of demanding the so-called classical train of symptoms in children, we should expect most cases of this disease to be atypical in their symptomatology. This fact might stimulate us to a more careful inquiry into each symptom, and a wiser correlation of the symptoms. Knowing how frequently the principles of diagnosis are violated in this connection, the author begs indulgence for the seeming repetition of these principles.

Inspection should be made in a well-lighted room, if possible. Note should be made of the faces, whether pinched or pale or toxic or anxious in appearance; whether breathing is costal or abdominal in type; whether the abdomen is relaxed, or scaphoid or distended; whether intestinal patterns show on the abdomen; whether the limbs are flexed or relaxed.

In what may be termed the personal consideration of the pain, the wise physician will secure first of all the cooperation of the child. This can rarely be commanded. It must be won—and that frequently by indirection. For this, time may be required. Rarely is even "leisurely haste" permissible. Frequently the examination of the child can be made in the course of a "visit," during which the exact history may be obtained from the parents. Seeming casualness in the preliminaries may open the way to the child's confidence and cooperation, and thus to a correct solution of the diagnostic problem. The primary pain may not have been severe, and the attack may have been very brief. We need to know the location of the pain, its character, if obtainable or definable by the child and its parents. In regard to the location of the pain also, we may almost



but not quite disregard the classical location of pain and tenderness; and McBurney's point need not exist for us save perhaps as a point of departure. Only the primary pain of appendicitis is in that organ alone. The secondary and later pain is compounded of pains, or sensations, due to the involvement of other organs secondarily, and is thus the symptom of complications. Thus the location of the pain and tenderness and of rigidity will be determined by the location of the appendix. Anatomists and surgeons recognize that no organ in the body varies as greatly in its anatomic relations as does the appendix. Hence, in not over 50% of our cases will we find McBurney's point the center of interest.

For the detection and estimation of pain, tenderness and rigidity, the utmost gentleness and consideration for the feelings of the child are necessary. We need to utilize our knowledge of child psychology, even to making a "game" of our examination. Thus the writer has won the trust of a child by the munificent present of two shining new "pennies," and muscular relaxation followed in the preoccupation incident to the contemplation of the glittering gift. If there be those who scoff at this "child's play" placed in a supposedly "scientific" paper, the author maintains that the proceedings outlined will be found scientifically correct, and fruitfully rich in results.

In child language pain is a "hurt" and the phenomenon it represents may not be recognized by any other term. Hence, it is not undignified to use the child's own phraseology. Here as elsewhere in life, a thoroughly warm hand will aid us in smoothing the way. For a cold and heavy hand will inspire fear in the child's mind, and muscular spasms and twitchings in the abdominal muscles, which spasms may be entirely unrelated to intraabdominal pathology. Here again indirection in method may lead to direct success. The finding of local tenderness and rigidity should seem incidental to a visit with the child and its parents. With eyes fixed on the patient's face, with the patient's knees flexed, perhaps supported by a cooperative parent, palpation should be carried on gently, exploring first every other part of the abdomen before proceeding to the affected area. Once apprehension is allayed, and the child's confidence won, much may be learned from an intelligent use of the sense of touch. The facial expression, the presence of blinking, flinching or scowl-

ing, are often more expressive than mere words. Visceral and abdominal reflexes are often more certain and spontaneous and trustworthy than speech which is prone to be colored by the psyche. While children are not to be depended on to give a logical exposition of their symptoms or an analysis of them, that is, after all the physician's function. However, children are by nature frank and forthright, they have less inhibitions, less preconceived notions and self-made diagnoses to contend with, nor so many mimic symptoms as do adults.

This is perhaps as opportune a place as any to say that in my judgment it is an error to apply ice and to freeze the abdominal wall so indiscriminately as is done. It often masks symptoms and the writer fails to see how freezing of the abdominal wall can have much or any effect except to increase internal congestion.

Once having secured the confidence and cooperation of the child, we can determine the presence of tender areas, their location, the presence of rigidity and, unfortunately, in late or neglected cases, tumor formation. In many cases confirmation may be obtained by fully extending the legs or having the child sit up or assume the left lateral position. Practically always these maneuvers will be found to accentuate the symptoms and so tend to confirm the presence of intraabdominal infection, its location and probable causation. In this examination we must not neglect the right costovertebral area, for often tenderness here denotes a retroceally placed inflamed appendix. Percussion is usually not very helpful because of nervous apprehension and muscular reactions.

Parenthetically, the writer confesses that rectal examination made as carefully as can be has not yielded him the diagnostic aid which most writers profess to attain. In the case of a low-lying appendix with extension of infection and tumor formation downward along the right pelvic wall, rectal examination would yield confirmation, but tumor is a late sign and should not be awaited. In our experience also, in the large majority of cases, the appendix lies above the iliac crest and is very frequently retrocecal and even subhepatic. However, a careful rectal examination is in order, even made under light narcosis.

If abdominal tenderness and rigidity and rebound pain (or Blumberg's sign) are present and have followed a prelimin-

ary colicky intermittent pain with comparative ease between attacks, perhaps beginning in the night and radiating about the region of the navel, we may be said to have begun our diagnosis.

However, a thorough examination of the chest is in order. Because of the nerve distribution to the viscera of chest and abdomen, diseases of the pleura and lung frequently simulate acute abdominal disease, and operations mistakenly undertaken—with results usually to be deplored. If there is any question of pneumonia or other chest condition an x-ray of the chest should not be neglected. "Whenever a child complains of pain in the abdomen, examine the chest." So Trousseau wisely advised. Pleurisy and pneumonia are characteristically accompanied by costal or abdominal breathing, rapid, grunting in type, with flushed cheeks and dilated alae nasi, higher white cell count, higher fever, higher pulse rate and greater restlessness. A "cold" may have preceded the attack and the pain in question is usually higher in the abdomen than the pain of appendicitis.

Occasional nausea and vomiting are present in at least perhaps 75% of cases of appendicitis in children—certainly to a greater extent than in adults. On the other hand, nausea and vomiting are of such frequent occurrence in children that these symptoms taken alone are not consistently of diagnostic value in appendicitis. Remembering that vomiting is common in the many digestive upsets of children as well as a frequent accompaniment of the onset of the acute infectious and the exanthemata, we need not be influenced too much by its presence. However, if nausea and vomiting follow the onset of marked abdominal pain, we have a symptom of great possible value. It remains to determine the cause of the vomiting—a chapter which we can not discuss here.

Fever is usually present but to variable degree. It is seldom very high, rarely above 101 to 103. A gradual rise is common. The absence of fever, however, does not preclude the presence of even a gangrenous appendix. Thrombosis of the mesoappendiceal vessels may temporarily prevent the absorption of toxins. A sudden drop in the fever, especially when accompanied by increase of the pain or shock, may spell a perforation. If markedly high and "saw tooth" in type, especially if accompanied by chills, we need to look out for pyelitis, ureteral stone or other urinary infections. Additional, differential signs are the fact that pyelitis occurs most

frequently in girls while appendicitis occurs oftenest in boys. The abdominal symptoms are usually less pronounced, and hematuria, pyuria, dysuria and frequent urination are usually demonstrable. Even with a positive urine, however, we need to remember that all these urinary symptoms have been caused by an inflamed appendix lying next to the bladder, kidney or ureter. On occasion, also, disease of the appendix and of the urinary system are co-existent. Here again it is a good rule to "Stop, Look, Listen!" If the symptoms are not too urgent an x-ray of the urinary tract may aid in the diagnosis.

In addition to the urine, the blood should also be examined. The white count is, as a rule, only moderately high, ranging from 10,000 to 15,000. The differential count is most important. If it is over 80%, infection can be considered present, but its location remains to be determined. It is to be emphasized that the blood count alone, neither from the standpoint of diagnosing the presence of appendicitis nor decision for or against operation, is to be depended on. A low white count, even in the presence of a gangrenous appendix, has been our experience. In this, as in other diseases, laboratory findings are not to be taken as conclusive, apart from the signs and symptoms obtained by a careful and conscientious examination.

Constipation is usually present, perhaps in 90% of the cases—as one would expect from a knowledge of the inhibitory action of infection on the peritoneum. But the writer has had several cases in which severe diarrhea preceded or accompanied appendicitis. The cause of this phenomenon is not clear. Was an enterocolitis the cause of the appendicitis or vice versa?

Other conditions causing pain and constipation may need to be ruled out. Among these are volvulus, intussusception, disease of a Meckel's diverticulum, mesenteric lymphadenitis, abdominal allergy, and in older girls perhaps, tubal infection. Most of these conditions have a separate symptomatology and can only be mentioned here.

As regards the operative treatment, it is a good rule to "get in quick; get out quicker"—ungrammatical as is the phraseology. The wise surgeon will expose as little new peritoneum as possible to infection. In most instances the appendix can be properly removed, but occasionally "discretion is the better part of valor" and a simple opening of the abscess is wise.



"When in doubt drain" is perhaps a good rule, but in the opinion of the writer, added experience in the care of these cases makes drainage less frequently necessary. Drainage is probably never indicated unless free pus is present, and usually the drain can be safely removed within four days. A split soft rubber tube with a gauze wick within is preferable. In the after-care we need to secure comfort if possible, and to combat dyhydration and acidosis. The Fowler position has its advantages. Fluids, saline solution, glucose, all have their value, introduced into the system by whatever means are indicated. In selected cases, we have given saline and glucose intraperitoneally, with satisfactory results. And! We need be in no greater haste to administer laxatives *after* than before the operation!

It will be remarked that we have not cumbered our brief resume of this important subject with case histories, since the purpose is to call attention to the sad results of delay in diagnosis and treatment, to make some suggestions as to means and methods of accurate and early diagnosis.

Since appendicitis is probably not a preventable disease, our sole means of putting a stop to the tremendous toll of life exacted by it is early recognition and early operation.

Parents must be instructed as to the possible danger of abdominal pain and the wisdom of consulting competent medical advice. Also the perils of food and purgatives need to be emphasized. Physicians have here a great duty and responsibility. To emphasize this responsibility and opportunity has been the aim and purpose of this brief dissertation.

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DISCUSSION—*Dr. C. M. Pounders*, Oklahoma City:

I doubt if there has been a paper read or one that will be read before this meeting, of any more importance than this paper of Dr. Risser's. He has very cleverly, I think, brought out and dwelt upon those points upon which most of us are weak and upon which most of us stumble in looking after these cases. Appendicitis in the young child, while it is not quite as common as it is in the adult and older persons (that point has been over-emphasized, I think, and that is one of our troubles), is more common, I am sure, than is generally recognized and it

seems to be, if anything, on the increase. We have a condition, as Dr. Risser pointed out, in which surgery is entirely effective and almost without mortality if it is made available in time. There may be cases of appendicitis that are more or less benign and if allowed to go on do not result in disaster, but there is no way we can determine these cases, so the only safe procedure is to regard them as dangerous and hazardous and make the diagnosis and make surgery available to them at the earliest possible moment. The difficulties in the diagnosis were brought out by Dr. Risser quite well, I think. It is much more difficult to make a diagnosis of appendicitis in a child, but if you go at it as carefully and cautiously as he suggested in this paper, take your time and not hurry, you should be able to reasonably well arrive at a diagnosis in nearly every case that comes to us, without undue amount of delay. Dr. Risser inferred one thing in his paper which he did not come out and emphasize quite as much as I am going to do, and that is those of us who don't do surgery at all probably have a greater responsibility in the presence of a mortality rate than do the surgeons themselves for this reason—most of these cases come to us. They go to a pediatrician or some general practitioner who doesn't do surgery. When a child has a stomach-ache the people do not call in the surgeon generally, and we are responsible much more than the surgeon, because we dally around and fail to make a sufficiently early diagnosis to give the surgeon a chance to operate while he can still save them.

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#### MANAGEMENT OF PREECLAMPTIC TOXEMIA AND ECLAMPSIA: REPORT OF THE AMERICAN COMMITTEE ON MATERNAL WELFARE

The American Committee on Maternal Welfare (Journal A. M. A., May 11, 1935), believes that permanent injuries or deaths attributed to the nonconvulsive and convulsive forms of toxemia of late pregnancy are largely preventable and discusses the early signs of preeclamptic toxemia, the essential measures for the detention and management of toxemia of late pregnancy, methods of induction of labor, eclamptic convulsions, treatment of eclampsia and postpartum convulsions. In their discussion they have made no attempt to include all available methods of examination and treatment but rather to give a brief outline of conservative, comparatively simple, and reasonably effective measures available to the general practitioner as well as to the specialist in obstetrics. Severe preeclamptic toxemia or eclampsia constitutes a hazard, in the management of which consultation is highly desirable and adequate hospital facilities are distinctly advantageous.

# CONTACT DERMATITIS\*

ROBERT L. HOWARD, M.D.  
OKLAHOMA CITY

Through the efforts of many investigators, during the past few years, it has been conclusively demonstrated that an individual may develop a contact hypersensitivity to almost any element in his environment. In view of this fact, it is felt that the presentation of a partial list of common materials to which we are almost

constantly exposed during the course of our daily life will be of assistance to the general practitioner.

The following may be considered representative of the various types of substances responsible for a considerable portion of obscure skin eruptions.

## I

### HOUSEHOLD REMEDIES

- |   |   |
|---|---|
| <b>A—Antiseptics</b><br>Alcohol<br>Borax<br>Boric acid<br>Carbolic acid<br>Glycerol<br>Hexylresorcinol<br>solutions (S.T. 37)<br>Iodine<br>Listerine<br>Lysol<br>Mercurochrome<br>Mercury ointments<br>Pepsodent Antiseptic<br>Tincture of<br>merthiolate | <b>B—Burn Remedies</b><br>Butesin picrate<br>Linseed oil<br>Unguentine<br><b>C—Antiphlogistics</b><br>Absorbine Jr.<br>Flaxseed poultice<br>Mustard plaster<br><b>D—Parasitcides</b><br>Sulphur ointment<br><b>E—Nose Drops</b><br>Vick's Nose Drops<br><b>F—Adhesive Plaster</b> |
|---|---|

## II

### MATERIALS CONTAINING ANIMAL HAIR OR EMANATIONS<sup>1</sup>

- |  |   |
|--|---|
| <b>A—Cow Hair</b><br>Carpet yarn<br>Carriage robes<br>Cheap furs<br>Glove linings<br>Mattress stuffing<br>Toy coverings<br><b>B—Camel Hair</b><br>Belting<br>Blankets<br>Brushes<br>Coats<br>Oriental rugs<br>Sweaters<br><b>C—Sheep Wool</b><br>Blankets<br>Cloth<br>Felt<br>Mattress stuffing<br>Rugs<br>Tapestry<br>Quilt padding<br><b>D—Horse Hair</b><br>Coat padding<br>Mattress stuffing<br>Upholstery | <b>E—Goat Hair</b><br>Mohair upholstery<br>Muffs<br>Rugs<br>Suits<br>Wigs<br><b>F—Rabbit Hair</b><br>Felt<br>Furs<br>Glove linings<br>Pillow stuffing<br><b>G—Human Hair</b><br>Hair nets<br>Transformations<br><b>H—Dog Hair</b><br>Pets<br><b>I—Cat Hair</b><br>Pets<br><b>J—Feathers</b><br>Canaries<br>Comforters<br>Domestic fowl<br>Dusters<br>Hat trimmings<br>Parrots<br>Pillows<br>Upholstery stuffing |
|--|---|

<sup>1</sup>From the Balyeat Hay Fever and Asthma Clinic, Oklahoma City.

\*Read before the Annual Meeting of the Oklahoma State Medical Association at Oklahoma City, May 15, 1935.

## III

### ARTICLES CONTAINING COTTON, FLAX, SILK, RAYON AND LEATHER

- |  |   |
|--|---|
| <b>A—Cotton</b><br>Flannel<br>Gingham<br>Indian Head<br>Mattress stuffing<br>Pillows<br>Quilts<br>Robe padding<br>Toweling<br>Wound dressings<br><b>B—Silk</b><br>Dresses<br>Hair ribbons<br>Hose<br>Rugs<br>Scarfs<br>Shirts<br>Ties<br>Underwear<br>Upholstery | <b>C—Flax</b><br>Collars<br>Cuffs<br>Damask<br>Linen<br>Sheeting<br>Thread<br><b>D—Rayon</b><br>Scarfs<br>Stockings<br>Ties<br>Underwear<br><b>E—Leather</b><br>Belts<br>Gloves<br>Hat bands<br>Razor strops<br>Riding equipment<br>Shoes |
|--|---|

## IV

### COSMETICS

- |  |   |
|--|---|
| Hair dyes<br>Eyebrow & lash dyes<br>Hair tonics<br>Hair oils<br>Shampoos<br>Face astringents | Creams<br>Perfume<br>Powders<br>Hand lotion<br>Tooth paste<br>Nail preparations<br>Soap |
|--|---|

## V

### WOOD, SAWDUST, RUBBER, METALS AND ALLOYS

- |  |   |
|--|---|
| <b>A—Wood and Sawdust</b><br>Birch<br>Brazilian walnut<br>Ebony<br>Japanese hard wood<br>Mahogany<br>Oak<br>Rosewood<br>Satinwood<br><b>B—Rubber</b><br>Bunion protectors<br>Garters | Girdles<br>Gloves<br>Sheeting<br><b>C—Metals and Alloys</b><br>Combs<br>Dentures<br>Earrings<br>Hairpins<br>Necklaces<br>Rings<br>Spectacles<br>Watch bands |
|--|---|



## VI

LACQUERS, VARNISHES, POLISH, WAX AND  
CLEANING PREPARATIONS

A—Lacquers & Varnishes	Toilet seats <sup>2</sup>
Auto wheel	Toys
Canes	B—Polish and Wax
Crutches	Johnson's floor wax
Floor	O'Cedar oil polish
Furniture	C—Cleaning Preparations
Lamp shades	Bleaches
Mah Jongg sets	Liquid cleaners
Radio earphones	Soaps
Telephone receivers	Washing powders

## VII

## PLANTS

Begonia	Hyacinth
Bleeding heart	Poison ivy
Chrysanthemum	Primrose
Fungi (penicillium)	Ragweed
Geranium	Tulip bulb

## VIII

## FOODS

Asparagus	Orange peel
Cinnamon	Parsnip
Chocolate	Sugar
Flour	Tomato
Grape	Vanilla
Lettuce	

## IX

## DYES

Arsenic compounds (wall paper)	Ochre dye (curtains)
Bismark Brown (shoes)	Paralac ink roto- gravure (newspaper)
Erythrosin (stockings)	Paraphenyldiamine (furs)

## X

## CHEMICALS

Ammonium persul- phate (dough im- provers)	Paradichlorbenzene (deodorants)
Mercuric sulphide (red) (dentures)	Paratoluidin (shoe polish)
Metol and pyrogal- lic acid (photo- graphic develop- ers)	Pyrethrum (insect powder)
Naphthalene (moth balls)	Pyroxylin and cel- lulose acetate (horn-rimmed spectacles)
Oil of mirbane (insect spray)	Resin (violin)
	Sulphate and phos- phorus (matches)

## XI

## DRUGS USED BY PHYSICIANS

Anesthesine	Ephedrine
Butesin	Nupercaine
Butyn	Orthoform
Chloral	Procaine
Cocaine	

The following case reports illustrate different types of contact dermatitis:

## Cosmetic Dermatitis

Case 1. Mrs. C. S. W., white female, aged 42, was first seen at the clinic in March, 1934. She com-

plained of a skin eruption of the eyelids, neck, shoulders and arms, that had appeared periodically during the past six years.

All tests were negative except two of her favorite cosmetics:

	24-hour reading
April Showers Brilliantine	***
Yardley's Lavender Sachet	**

After discontinuing these preparations the patient recovered rapidly.

## COMMENT

This case is an excellent example of the great length of time that a cosmetic hypersensitivity may go unrecognized.

## Nickel Dermatitis

Case 2. Dr. R. M. B., who has no family history of allergy, called attention on September 8, 1934, to a vesicular dermatitis that had developed under a gold alloy ring. The lesions were first noted nine months previously, when the ring was worn on the third finger of the left hand. The ring had been transferred to the corresponding finger of the right hand some time in June, 1934.

At the time of observation in September the involved area on the left hand had healed, but a vesicular eruption was present on the right ring finger. The ring was removed and the dermatitis observed for a period of five weeks. At the end of this time the inflammatory process had largely subsided, though a tiny vesicular and scaly patch persisted on the third interdigital web.

Since the ring was known to contain nickel, it was judged to be the real offending agent. A patch test was done, using a well-cleaned nickle coin. After forty-eight hours, the patch was removed, revealing a definitely positive reaction (Fig. 1.).



Fig. 1—(1) Upper: A positive patch reaction to nickel. (2, Lower: An "elastopatch" in place.

## COMMENT

This case demonstrates:

(1) How a piece of jewelry may be responsible for a very stubborn skin eruption.

(2) The development, in a non-allergic individual, of generalized skin sensitization following local sensitization in a small area.

(3) The persistence of skin lesions for weeks after the removal of the offending allergen.

(4) That the causative agent may be demonstrated by the patch test.

#### Silk Dermatitis

Case 3. G. S., white male, aged 10 years, was brought to the clinic in June, 1927, because of an asthma of two years' standing. Aside from the fact that one maternal cousin had asthma, no history of allergy could be obtained.

Skin tests showed strong positive reactions to ragweed, bermuda grass and feathers, as well as milder responses to other members of the animal dander group.

Under appropriate therapy the asthma disappeared and the patient remained well until January, 1934, when he returned with a dermatitis on the anterior part of the neck.

Test revealed (Fig. 2):

Silk scratch (protein powder)	****
Silk patch (muffler)	**

Patient was instructed to avoid silk and to wear only cotton ties and cotton mufflers. When this was done the dermatitis regressed readily under local therapy.

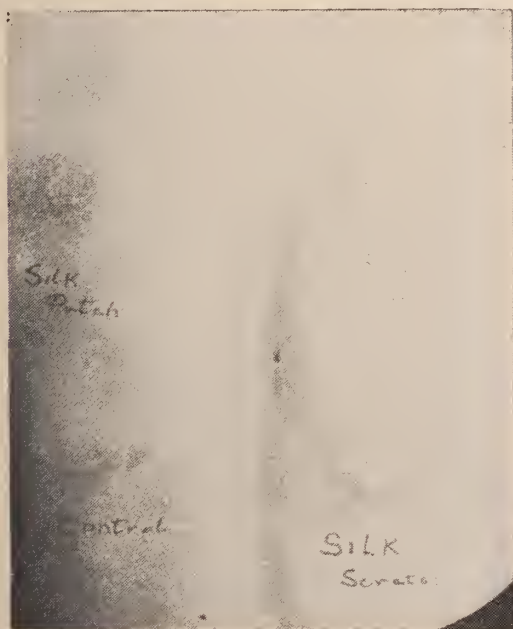


Fig. 2—(1) Right, upper and lower: Four plus positive scratch test to silk protein. These reactions developed within 15 minutes. (2) Left, lower: Control scratch. (3) Left, upper: Mildly positive patch reaction to silk.

#### COMMENT

This case shows the following points of interest:

(1) Common articles of wearing ap-

parel may be responsible for annoying skin manifestations.

(2) The positive scratch reaction indicates the patient is an allergic individual and that blood reagins could, in all probability, be demonstrated.

(3) In cases of this type where the percutaneous test is more striking than the patch reaction, the offending allergin usually produces its effects more as an inhalant than by its direct irritant action upon the epidermis.

#### REFERENCES

1. Feinberg, S. M.: Household Objects as Causes of Hypersensitiveness. *J. Lab. and Clin. Med.* 13:220 (Dec.) 1927.
2. Cummer, Clyde L.: Toilet-Seat Dermatitis Produced by a Red Stain. *Arch. Dermat. and Syph.* 27:976 (June) 1933.

#### THE THERAPY OF THE COOK COUNTY HOSPITAL: ECLAMPSIA

Bernard Fantus, Chicago (Journal A. M. A., April 20, 1935), describes the therapy of eclampsia as it is practiced by the attending staff of the Cook County Hospital. The prophylaxis of eclampsia is an important part of antepartum care. It requires routine examination every two weeks, during the last months, of blood pressure, urine and body weight, and for edema. Eradication of foci of infection, especially by dental care, should be insisted on. When convulsions are present, an emergency exists that requires immediate and constant attention. If the convulsion occurs at home, morphine (even 0.03 Gm.) should be given immediately by hypodermic injection, to quiet the patient during transfer to the hospital. The indications may be classified as (1) sedation, (2) hypohydration, (3) support and (4) operation. As in any severe case of preeclamptic toxemia convulsions may occur from twenty-four to forty-eight hours after delivery, sedative and other measures as described should be continued for several days. It is well to give as a routine, soon after labor, a hypodermic injection of 0.015 Gm. of morphine sulphate. Blood pressure readings and the urinary output should be recorded daily. The blood should be examined for nonprotein nitrogen retention. The low protein and salt poor diet should be continued until edema has disappeared. Then fluid should be given freely, provided the kidney can respond to the appeal. If the blood pressure and urine do not return to normal within two weeks after delivery, the therapy of nephritis is indicated.

#### SUMMER DIARRHEA IN BABIES

Casac (calcium caseinate), which is almost wholly a combination of protein and calcium, offers a quickly effective method of treating all types of diarrhea, both in bottle-fed and breast-fed infants. For the former, the carbohydrate is temporarily omitted from the 24-hour formula and replaced with 8 level tablespoonfuls of Casac. Within a day or two the diarrhea will usually be arrested, and carbohydrate in the form of Dextri-Maltose may safely be added to the formula and the Casac gradually eliminated. Three to six teaspoonfuls of a thin paste of Casac and water, given before each nursing, is well indicated for loose stools in breast-fed babies. Please send for samples to Mead Johnson & Company, Evansville, Indiana.



## SYMPATHETIC OPHTHALMIA \*

CHARLES H. HARALSON, M.D.  
TULSA

Sympathetic ophthalmia was first mentioned in the oldest German book on ophthalmology written by Bartisch in 1583. He wrote that "in cases of injury to one eye, the other good eye is besides also in great danger." This as well as a few sporadic case reports was all, until William McKenzie so clearly described sympathetic ophthalmia in 1835.

Augustin Prichard advocated the removal of the injured eye as a curative measure in 1851; this was generally accepted and practiced.

Ernst Fuchs in 1905 demonstrated sympathetic ophthalmia as a disease entity, supporting his conclusions by extensive anatomical and histological findings. The etiology was considered to be an infectious process due to the introduction of some micro-organism through the perforation.

Since 1905 the bacteriologists have labored long and ardently endeavoring to isolate the specific micro-organism causing such a distressing disease. Due to scarcity of material and inaccessibility of the tissues involved, definite knowledge of the etiology of sympathetic ophthalmia has not been attained.

There have been numerous theories, and many experiments have been conducted endeavoring to throw light on the etiology of this particular form of uveal disease. The most generally accepted theories are:

1. Bacterial transmission along or through the optic nerve.
2. Bacterial transmission by metastasis.
3. Allergy or hypersensitivity to uveal pigment.

The many conflicting reports of clinical cases and experiments leave the reader in much the same frame of mind as Bartisch, who, in 1583, wrote that "in cases of injury to one eye, the other good eye is besides also in great danger."

The ophthalmologist who does not have the greatest respect for sympathetic ophthalmia should visit one of the state schools

for the blind; there he will see the most deplorable end-results of this disease.

After examining and listening to the history of a score of these physically normal youngsters, it will not be possible for him not to have a more thorough understanding and sympathetic concern for all eye injury cases that may come under his observation.

The diagnosis of sympathetic ophthalmia is most difficult. The symptoms are varied and inconstant, making it impossible to make a diagnosis without the use of all the diagnostic aids available.

The first subjective symptoms are photophobia, low grade pain in the eye, lacrimation and a deficient accommodation; scleral injection may or may not be present. In such an eye where there is a history of injury, an examination with the corneal microscope should be made; if there are cells in the aqueous, they should be considered conclusive evidence that it is a case of sympathetic ophthalmia and the eye should be treated as such until proven otherwise.

The differential diagnosis between sympathetic ophthalmia and iridocyclitis is often impossible to make, except by clinical observation, and possibly the additional information obtained after enucleation. Findings in the enucleated eye which are considered pathognomonic of sympathetic ophthalmia are degenerative processes involving chiefly the uveal tract, epithelioid cells closely packed together with an occasional giant cell (the type described by Langhens) in their midst. The sclera is rather frequently involved in those cases in which the disease has been of long standing; there is a general round cell infiltration in the body of the iris and the choroid. This being a constant factor in a large number of the enucleated eyes which have been injured, has finally been settled upon as the true picture of sympathetic ophthalmia. However, the similarity of both the clinical and pathological findings in sympathetic ophthalmia to those of tuberculosis is rather definite. The tubercule bacillus has been isolated

\*Read before the Section on Eye, Ear, Nose & Throat, Annual Meeting of Oklahoma State Medical Association, Oklahoma City, May 14, 1935.

both from the blood stream and from the tissue of two eyes that were considered undoubtedly affected by sympathetic ophthalmia. This fact would allow us to at least consider the tubercular hypothesis.

The treatment of sympathetic ophthalmia is as elusive as the diagnosis. Unless the vision in the injured eye is fairly good or is equal to that in the sympathizing eye, it is customary, since 1851, to enucleate this eye, taking off a long section of the optic nerve. It has been recommended that the socket be treated by moderately large doses of radium; otherwise, the literature contains many case reports, with varied results from all types of treatment.

The results as described in the literature are far from conclusive but seem to favor those cases which have been intensely treated by some form of arsenic, sodium salicylate or non-specific protein therapy.

Personally, I have used the treatment recommended by Gifford, because of the seemingly direct effect that sodium salicylate appears to have upon the uveal tissues. In the two cases that I have seen, the result was an improvement of the vision from 20/50 to 20/20 in one case; the other patient had a total loss of vision, therefore the next case will materially influence my percentage.

In the present day information the final outcome of treating this disease depends largely upon an early diagnosis, combined with intensive treatment, as well as putting the patient completely at rest and using all eliminative and supportive measures that you would use in any seriously ill individual. The specific treatment in the past twenty years seems to be about equally divided between massive doses of sodium salicylate, arsenicals, and non-specific protein therapy.

#### CASE REPORTS

No. 1. C. M., age 35; male. Injured May, 1923. Patient reported complaining of inability to see. History: Family and personal history negative. May, 1923, was struck in right eye with a sharp stick; he consulted his family physician, who put two stitches in the eye; three months later he complained of pain and photophobia in the right eye; this would improve for a few days then would return again. Some time later the left eye became inflamed; visual loss was not definite until about one year after the accident.

This patient was led into my office in July, 1924; right eye ball slightly decreased in size; anterior chamber was obliterated and iris was attached to corneoscleral scar on temporal side; the sclera was injected and the eye was very sensitive to touch.

Left eye: Vision 10/200, cornea was cloudy and had numerous old and new deposits on posterior sur-

face. The iris was swollen and showed a few nodular areas; the pupillary margin was firmly attached to the lens capsule. Fundus examination revealed a dull red reflex only; the sclera was injected and painful to pressure.

The injured eye was enucleated after starting the treatment of massive doses of sodium and eliminative measures. After two weeks the eye was totally blind.

No. 2. J. H., age 23; male. Piece of steel penetrated corneoscleral margin in May, 1928; steel was removed by a magnet; patient dismissed from hospital with no apparent inflammation in the right eye. Four weeks later patient returned with pain in the left eye, and photophobia in the right eye.

Patient was dismissed from the hospital with no symptoms, as cured. He consulted me three weeks later—five weeks after the enucleation—complaining of inability to read, and with a slight photophobia. Slit lamp examination revealed cells in the aqueous, cloudiness in the anterior segment of the vitreous; the iris showed a few nodules, as well as reacting sluggishly to light. The fundus was negative except for a questionable inflammation of the optic nerve head; visual fields showed a narrowing of the upper temporal side of twenty degrees, as well as an increase in the size of the blind spot; visual acuity in this eye was 20/50, which was not improved by either lenses or the pin-hole.

This patient was hospitalized and treated identically the same as patient case No. 1. The eye quieted down, the aqueous cleared up and vision improved to 20/20. Patient was dismissed from the hospital one month later with apparently a normal eye. He was examined in March, 1935; his visual fields were normal, blind spot was normal, his amplitude of accommodation was normal.

No. 3. N. H., age 38. Injured 1931 in the left eye; treated by general surgeon; discharged with cataract and loss of vision. Patient reports that he has had occasional flareups in the left eye, associated with periods of pain and redness. The left eye was treated off and on by various individuals of questionable ability until December, 1934, at which time he consulted me. The following findings were noted in the left eye; pupil dilated, firmly attached to cataractous lens, moderate scleral injection, a total loss of light perception, cornea showing numerous brown deposits on the posterior surface. Right eye, vision 4/200, pupil partially dilated and firmly attached to the anterior lens capsule; the aqueous was cloudy, with numerous cells; the cornea had numerous deposits on posterior surface; the lens was clear; the vitreous showed rather dense vitreous opacities throughout; fundus gave a grayish reflex only; all laboratory work was normal, except for the tuberculin test which was positive.

Inasmuch as the left eye was showing no signs of active irritation, and inasmuch as the tuberculin test was definitely positive, this patient was placed upon tuberculin therapy, as outlined by Wood.

At the present time the pain in the right eye is absent. This patient's vision has improved to 20/200; the media are still too cloudy for any other fundus information, but the patient feels better.

This case would undoubtedly be classified clinically as sympathetic ophthalmia, but due to the fact that there was no irritation in the left eye at the time of the first examination or subsequently and due to the positive tuberculin reaction, he is



being treated as a tuberculous uveitis. The final outcome to date is encouraging but not in any manner conclusive.

#### IN CONCLUSION

Time has proven sympathetic ophthalmia to be a definite disease which usually follows penetration of the eye ball; the wound may be accidental or it may be postoperative.

All perforating injuries of the eye, as well as all postoperative eyes, should remain under close observation of the ophthalmologist. If there is constant or recurrent irritation in the perforated eye, that eye should be enucleated.

I wish to acknowledge the contributions of the numerous ophthalmologists who have so ably contributed to this subject.

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## REPORT OF THE PRESIDENT, LeROY LONG, M.D., TO THE HOUSE OF DELEGATES\*

### *Gentlemen of the House of Delegates:*

During the year, as indicated by the report of the secretary, there has been a slight increase in the number of members of the State Association, the total membership at this time being 1,552, against 1,464 one year ago. It must be noted, however, that just prior to one year ago the membership was 1,571. It should be noted, too, that, according to the 1934 edition of the American Medical Directory, there are 2,409 physicians in the state. Subtracting the present membership from this total leaves some 857 who are not members. To put it another way, our membership now approximates 65 per cent or 66 per cent of the physicians in the state. Leaving out of the reckoning those who are not eligible, it is reasonable to conclude that there are at present several hundred physicians in the state who ought to be members of the association.

In connection with the question of eligibility, attention is called to what appears to be a fact that some of the county societies have as members homeopathic and eclectic physicians who are avowed sectarians. There are two reasons for this conclusion: The first reason is that some of them, at least, are active in homeopathic and eclectic organizations, and this should be interpreted as being *prima facie* evidence that they are not interested in non-sectarian medicine. The second reason is that there is sometimes open opposition on the part of such members to the principles advocated by the regular profession. A recent example of this attitude was the

action of a homeopath listed as a member of this association when he took the floor and made a speech against the proposed basic science law at the hearing before a senate committee.

For some years the homeopaths and electics, under a plan sponsored by the American Medical Association, have been admitted to membership with the distinct understanding that they would agree to not practice sectarian medicine. Without entering into a discussion of the doubtful wisdom of such a plan, it is suggested that the county societies scrutinize applications for membership, and scrutinize in a no less definite way the attitude and acts of such members touching the fundamental agreement to not practice sectarian medicine.

During the year there have been three special meetings of the Council of the State Association. The first meeting, November 30, 1934, was called at the request of the faculty of the medical department of the State University. At this meeting the Council recommended unity of control and management of the medical department under the direction of the President and the Board of Regents of the University.

The second meeting, December 27, 1934, was called to consider a verbal communication from the governor-elect through the president-elect of this association to the effect that a list of three or more names submitted by the Council would be considered in connection with the appointment of a State Commissioner of Health, this information having been placed in the hands of the president-elect on December 14, 1934, at which time the action on the part of the governor-elect was carried by the newspapers under a Ponca City head-

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\*On account of the length of the minutes of the Council and House of Delegates, the report of the President to the House of Delegates, Oklahoma State Medical Association, at Oklahoma City, May 13, 1935, was omitted from the June Journal and it is with pleasure that we publish it in this issue.

line. The Council voted to assume the responsibility, and, as a result of its deliberations, the names of four members of this association were proposed, and one of them was later appointed to the position.

The third meeting of the Council was on February 22, 1935, to consider the report of the delegates of this association to the special meeting of the House of Delegates of the American Medical Association. After hearing the report, the Council endorsed the action of the special meeting, the particulars of which will be found in the official Bulletin of the American Medical Association.

Incidentally, the question of the medical department of the State University was again brought forward, and the Council again went on record as being in favor of unity of control and management under the direction of the President and the Board of Regents of the University.

In addition to the above three special meetings, there was the regular annual meeting of the Council May 13, 1935, at which time routine business, including the report of the Auditing Committee, was transacted. The Council also prepared a list of names provided for in the recently enacted crippled children's law from which, under the terms of the act, the governor of the state will select the number indicated in the act to constitute a board to pass upon the standardization of hospital work covered by the act. The following list was chosen:

District No. 1—Dr. M. M. DeArmand, Miami.

District No. 2—Dr. J. F. Park, McAlester.

District No. 3—Dr. C. R. Rountree, Oklahoma City.

District No. 4—Dr. C. W. Tedrowe, Woodward.

District No. 5—Dr. W. M. Browning, Waurika.

District No. 6—Dr. Thomas McElroy, Ponca City.

District No. 7—Dr. W. P. Fite, Muskogee.

District No. 8—Dr. J. A. Walker, Shawnee.

District No. 9—Dr. J. D. Osborn, Frederick.

As expected, the efforts to secure the passage of a basic science act were met by fierce opposition on the part of the

cults. Not that, only, but they were met by the most obvious evidences of lack of interest and information on the part of members of the legislature. And it did not stop at that. On at least one occasion the chairman of the senate committee declared, in the midst of a hearing, that he was opposed to the bill. Members of the legislature, looked upon as being conservative, and to whom we could formerly go with more or less confidence, were apparently without the slightest interest in the bill, and sometimes distinctly and openly opposed to it.

While the bill was before the legislature, your President, happening to be in St. Paul, Minnesota, had a conference with the official representative of the Minnesota State Medical Association, in which he was told that the basic science law in that state was administered by a mixed board under the absolute control of the regular medical profession. It was understood that this board was patterned after the mixed board recommended by the American Medical Association in connection with the examination of applicants for license to practice medicine, the same as exists in Oklahoma at the present time. He reported that it had worked with absolute satisfaction in Minnesota. This information was sent to the chairman of our committee on Public Policy and Legislation, and copies of the letter were sent to the president-elect and secretary of this association. Later, it developed that your President had received a wrong impression about the constitution of the Minnesota basic science board, and after a conference with the chairman of our Committee on Public Policy and Legislation it was decided to not consider it at all.

Incidentally, your President learned of one arrangement in Minnesota which appears to be of great practical importance in connection with the enforcement of laws in which the medical profession is concerned. Through this arrangement each member of the State Association pays a tax that goes into a fund for the employment of an attorney to look after all the legal matters in which the association is interested. It is a practical matter that should receive some consideration.

In the annual report of the Secretary-Treasurer-Editor attention is called to the financial situation of the association, and to the satisfactory development of the Journal. The statement as to the finances is self-explanatory, but your President wishes to emphasize the importance of ac-



tive cooperation on the part of the members of the association in the continued support of the Journal, which is the medium for the distribution of scientific information in connection with medical matters in this state.

Finally, your President wishes to refer to an address made by him at Tulsa one year ago in which he indicated the importance of ethical and technical preparation, supported and beautified by humanism, in the construction of a sound foundation upon which success and usefulness in medicine might be built. The statements made in that address were made after deliberate reflection, and as they are reviewed now there is no disposition on the part of the author to change them in any respect. He believes that a proper recognition of the profound truths of the doctrine he attempted to teach at that time would, in these troublous days, be the salvation of the individual doctor of medicine, and, no less, the salvation of groups of doctors of medicine.

Your President now closes this report with the following quotation from that address: "What a doctor amounts to in medicine—what he amounts to in the world—does not depend upon legislation; nor upon practice *en masse*, with a medical tycoon here and there; nor upon visionary insurance schemes where a large part of the money collected finds its way into the hands of the promoter. What he knows, how he lives, what he is able to do, what he does—these are the qualifications upon which his career must be built."

#### EFFECT OF CEVITAMIC ACID INJECTIONS ON CAPILLARY RESISTANCE

Gilbert Dalldorf and Hollis Russell, Valhalla, N. Y. (Journal A. M. A., May 11, 1935), tested fourteen residents of the local county home who were found to have reduced capillary resistance. In all but three cases, 100 mg. of cevitic acid was injected parenterally. In the three exceptions, 50 mg. was used. All of them showed a marked and prompt response in capillary resistance, which persisted for at least twenty-four hours. Of ten other county home residents, four were found to have fragile capillaries, and these likewise responded promptly to cevitic acid. In this group the average capillary resistance before injection was 24 cm. of mercury negative pressure. After injection the average rose to 35 cm. It is evident from the results that cevitic acid promptly increases the resistance of the skin capillaries to rupture. The prolonged effect of the injections shows the action to be a specific one of the cevitic acid and not an immediate reaction to acid as such. The results secured are identical with those reported by one of the authors four years ago as occurring in scorbutic guinea-pigs following the injection of neutralized orange juice; they are similar to but more

rapid than the effect in both guinea-pigs and children of feeding large amounts of antiscorbutic foodstuffs. The results further substantiate their observations that the common condition of capillary fragility represents a mild form of scurvy, a "subclinical scorbutus".

#### MUSCULAR DYSTROPHY, MUSCULAR ATROPHY, MYASTHENIA GRAVIS AND STRABISMUS: CLINICAL AND BIOCHEMICAL STUDIES OF EFFECTS OF AMINO ACID THERAPY

Carlo J. Tripoli, William M. McCord and Howard H. Beard, New Orleans (Journal A. M. A., Nov. 24, 1934), observed forty three patients suffering from the following eleven different pathologic-clinical types of myopathies as regards the effects of amino acid therapy: myasthenia gravis, progressive muscular dystrophy, progressive pseudohypertrophic muscular dystrophy, muscle wasting from disuse, progressive spinal muscular atrophy, subacute and chronic poliomyelitis, multiple sclerosis, amyotrophic lateral sclerosis, muscular paralysis from jamaica ginger poisoning, muscular paralysis from peripheral nerve section and Friedreich's ataxia. Creatinuria was present in each of the ten different types of cases, except in one case of chronic poliomyelitis of fifteen years' duration. The cases in which the average creatinuria increased from 50 to 200 per cent above that of the control period after amino acid therapy was begun, provided this increased creatinuria disappeared in a few weeks, showed both subjective and objective improvement. Cases of the progressive nuclear type which showed about the same increase and decrease of creatinuria as those in the preceding classification showed only subjective improvement or merely an arrest of the symptoms. Cases in which no increased creatinuria occurred or in which the increase was less than 50 per cent above that of the control period showed no improvement. In general the cases classified as primary myopathies and myasthenia gravis showed distinct clinical improvement, except in a few cases of the former type in which the stage of the diseases was advanced to the point of complete muscle degeneration. Cases in which no metabolic studies were made conformed clinically in general to the foregoing statements. The inclusion of amino acids in the diet serves to increase the appetite and body weight in the majority of patients with muscular dystrophy and muscular atrophy.

#### TREATMENT OF GONORRHEA IN THE FEMALE

Emily Dunning Barringer, New York (Journal A. M. A., Dec. 15, 1934), states that vaccine therapy is not a specific for the cure of gonorrhea. It is, however, probably a valuable form of treatment in the acute and subacute stages of the disease. This is probably true also in chronic cases in which the main offending organism is the gonococcus. It is probably not of value in cases due to "mixed" infection. In the acute and subacute stages, vaccine therapy will probably shorten the period of hospitalization. However, the great drawback of severe reaction from this treatment, especially with large doses, is to be considered. It is questionable whether large doses are justifiable, because of these reactions. Probably vaccine therapy in smaller doses combined with indicated routine treatment would be a more desirable type of treatment. Vaccine therapy is of sufficient importance to warrant further careful study into dosage, complement fixation reaction and tests for proof of cure.

# THE JOURNAL

OF THE

## Oklahoma State Medical Association

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DR. L. S. WILLOUR.....Editor-in-Chief  
McAlester, Oklahoma.

DR. T. H. McCARLEY.....Associate Editor  
McAlester, Oklahoma.

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Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, 203 Ainsworth Building, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

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### EDITORIAL

#### THE MEDICAL SCHOOL

It would appear that at the meeting of the Board of Regents, held in Oklahoma City, June 18th, it was decided to take some very definite action relative to the Medical School. Both Dean Moorman and the business manager were removed, which of course will not meet with the unanimous approval of organized medicine in Oklahoma, as through our House of Delegates we gave our sincere indorsement of Dr. Moorman and it would appear like a mistake to lose the services of so valuable a man. Mr. C. C. Hatchett, Durant, Chairman of the Board, announces the Board's action as follows:

*First:* Adoption of President Bizzell's recommendation for unified

control of the Medical School and the Hospital.

*Second:* Commendation of the administration of Moorman and Bostic, but their offices were declared vacant, effective July 1, "on account of the unfortunate situation that has arisen and without deciding the issue, but with the view of acting in the best interest of the University and Medical School."

*Third:* Instruction to Dr. Bizzell to recommend a full time dean not later than September 1.

*Fourth:* Appointment of Dr. Turley and Dr. Jeter as acting dean and business manager.

*Five:* Full authority for the new dean, when elected, to appoint the staff and all persons under him, subject to the approval of the Board.

It would probably be unwise to comment, editorially, on the action of the Board of Regents; however, organized medicine in Oklahoma will certainly watch with intense interest the outcome of this action and we sincerely hope that the high standard of our medical school may be maintained under this new plan.

—O—

### OSTEOPATHIC LICENSURE

In the published proceedings of the Annual Congress on Medical Education, Hospitals and Licensure some very interesting information relative to the conduct of the osteopathic colleges is brought to light.

The College of Physicians and Surgeons of Ontario, the sole body in the province empowered to license to practice medicine sent Drs. Frederick Etherington and E. Stanley Ryerson to the United States to investigate the character, quality and value of work done in schools of osteopathy. Four of the leading osteopathic colleges were appraised by this committee, one located at Kirksville, one in Des Moines, one in Philadelphia and the fourth in Chicago. There are no osteopathic colleges in Canada and all applicants were graduates from one of the schools located in the United States. Their investigation as to the so-called theory on which the system of osteopathy is based (this information being gleaned from the authorities in the colleges investigated), were thus put down:

1. The body is able to produce within itself



all substances and materials necessary for the maintenance of health and for the prevention and cure of disease.

2. Disordered circulation is the result of bony maladjustments, chiefly in connection with the spinal articulations. These maladjustments, or "lesions" by pressure on nerves, cause dysfunction in arterial supply and resultant disease.
3. The chief, if not the only, necessity in the cure of disease is the readjustment by manipulation of spinal luxations and impactions and, associated with this, the relief of muscular contractures.

However, on this basis the osteopaths had asked the Canadian Board to allow them the following privileges:

1. To be empowered to sign birth and death certificates.
2. The right to use the title "Doctor."
3. The privilege of writing prescriptions.
4. The right of entry to public hospitals.
5. To have their services accepted by the Workmen's Compensation Board.
6. The right to make use of public health laboratories.

After the investigation of the four schools above mentioned the following conclusions were reached:

1. The buildings, plant and equipment of the four colleges visited do not provide the facilities necessary for the training of students destined to practice any general system of the healing art.
2. Hospital and clinical facilities are inadequate.
3. Requirements for admission and the length of courses fall far below the standards maintained by the faculties of medicine of Ontario.
4. The curriculums and courses of study are so different from our own in their quality and fundamental principles of instruction that they could not in any sense be recognized as equivalent.
5. The scientific training and clinical experience of the teaching staffs are not of a quality or character to warrant their courses being accepted as fulfilling the requirements of the College of Physicians and Surgeons of Ontario.
6. As a result of our visit and after an inspection of their buildings, plants and equipment, their hospital and clinical facilities, their requirements for admission and their curriculums, after attending some of their lectures, laboratory classes and clinic, and bearing in mind the lack throughout the course of any adequate bedside teaching, we are firmly convinced that it would be against public interest and welfare to admit the graduates of these schools, past or present, to the Ontario licensure examinations.

These conclusions were largely based upon the investigation of three departments—that of anatomy, pathology and

clinical training, and the details of the investigation of these departments showed that all schools inspected were woefully wanting in all details including material and the ability of the teaching staff.

Now in spite of these conditions the osteopaths, who started their school some fifty years ago, have succeeded in placing on the statutes a law regulating its practice in every state of the Union and this cult boasts of this fact. In twenty-eight states they have separate boards for osteopaths, in other states they are examined by medical examining boards, fourteen of which provide osteopathic representatives, while in ten states and the District of Columbia, licenses granting all privileges of physicians and surgeons to osteopaths is issued.

After reading this report and becoming familiar with the character of instructions that is given in osteopathic colleges I no longer wonder that this cult joined other cults in this state to defeat the Basic Science Law, as their mortality rate before such a board with such meager fundamental education would be exceedingly high.

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## MEDICAL DEFENSE

It has been necessary from time to time to refuse assistance from the Medical Defense Fund because the applicants have not conformed with the rules concerning the use of this money. The rules have been published before, but in order that no injustice might be done to any member we are again making this publication and the Medical Defense Committee insists that applications for assistance conform in every detail to these rules.

### MEDICAL DEFENSE RULES

(a) The annual premium payable to the Medical Defense Fund shall be One Dollar (\$1.00) per year, this to be taken from the annual dues of Four Dollars (\$4.00).

(b) If the Insured carries a policy with any responsible indemnity company he shall waive the right to call upon the State Medical Association for relief.

(c) Upon becoming aware of any malpractice or allegation of such malpractice, the member shall give immediate written notice thereof, with the fullest information obtainable at the time, to the Secretary of the State Medical Association.

(d) If suit is brought against the member to enforce a claim for damages, he shall immediately forward to the Secretary of the State Association such summons or other process as soon as the same has been served on him.

L. S. WILLOUR,  
Secretary.

## MOTION PICTURES AVAILABLE

Any of the following films (16mm.) may be borrowed without charge for showing by physicians to medical societies, medical students, hospital groups, etc.

These films are offered by Mead Johnson & Company as a service to the medical profession. No responsibility is assumed for the methods, technique, facts or theories shown in these films. These represent the preference of the individual physicians through whose kindness these films have been made available. In practice it has been found, at meetings of medical groups, that the films serve as a stimulating basis for discussion, and as collateral material for teaching purposes. Names of authors furnished on request.

## GROUP A (Surgical)

	Showing Time (Min.)
1. Excision of Cervical Rib.....	6
2. Elbow Surgery.....	8
3. Cholecystectomy (2 reels).....	30
4. Gastric Ulcer.....	9
5. Goiter Surgery.....	16
6. Hysterectomy (2 reels).....	22
7. Knee Surgery.....	14
8. Bone Grafting in the Lumbosacral Spine.....	10
9. Bone Grafting in the Lumbar Spine.....	14
10. Plastic Surgery (2 reels).....	23
11. Breast Surgery (2 reels).....	28
12. Restoration of Function in Cases of Harelip and Cleft Palate.....	14
*13. Cataract Surgery.....	10
*14. Ptosis (Eye) Surgery.....	16
*15. The Administration of Oxygen by Oro-Pharyngeal Catheter.....	10

## GROUP B (Obstetrical)

	Showing Time (Min.)
1. Breech Extraction with Forceps (2 reels).....	20
2. Breech Presentation with Manual Aid.....	16
3. Left Mediolateral Episiotomy and Repair.....	9
4. Spontaneous Delivery.....	11
* 5. Normal Delivery (Especially for Nurses).....	16
6. Median Line Episiotomy Under Local Anesthesia (Film Discontinued).....	16
7. Mid Forceps Delivery.....	12
* 8. Multiple Pregnancy.....	16
* 9. Intracranial Injuries of the New-Born.....	16
*10. The Physiology of Fertilization in the Human Female (2 reels).....	24

## GROUP C (Pediatrics)

	Showing Time (Min.)
1. Preparation of Infant's Food (2 reels).....	24
1. Differential Diagnosis of Vomiting in New-born (3 reels).....	34
3. Technique of Breast Feeding.....	12
4. Miscellaneous Pediatric Cases (2 reels).....	20
5. Pediatric Nursing Technique.....	12
6. Physical Examination of the Infant (2 reels).....	20
7. Some Diagnostic and Therapeutic Procedures.....	16
8. Pediatric Anomalies.....	12
* 9. Obstructive Laryngitis.....	8

## GROUP D (Laboratory)

	Showing Time (Min.)
1. Cod Liver Oil.....	11
2. Activities in the Mead Johnson Research Laboratory (8 reels)—	
(a) Vitamin Assay Technique—Laboratory and Purification of Diet.....	12
(b) Vitamin Assay Technique—Vitamin A, B, and C.....	10
(c) Vitamin Assay Technique—Assay of Ergosterol and Vitamin D.....	14
(d) The Chemical Laboratory, Mead Johnson & Company.....	16
(e) A Study in Mineralization.....	14
(f) Manufacture of Ergosterol and Vitamin D.....	14
(g) Dextri-Maltose Manufacture, Sanitary Control of (2 reels).....	30
* 3. Mesenteric Lymphatics, A Cinemicrographic Study.....	9

\*Recently added subjects.

When borrowing films, please allow one week in advance of desired date.

## Editorial Notes—Personal and General

DR. WALTER S. LARRABEE, Tulsa, is reported ill at his home.

DR. V. H. BARTON, McAlester, has been appointed State prison physician.

DR. W. G. HUSBAND, Hollis, has returned from Rochester, Minnesota, and has reopened his hospital.

DR. JOHN I. GASTON, Shawnee, has been appointed Superintendent of Health of Pottawatomie county.

DR. J. H. LAWS, Broken Arrow, is reported suffering from a broken leg received in an automobile accident.

DR. CHAS. M. PEARCE, Oklahoma City, State Health Commissioner, is in Washington attending a health conference.

DR. E. ALBERT AISENSTADT, Picher, sailed the 29th of June for Rio de Janeiro to attend the Pan-American Congress.

DR. W. L. SHIPPEY, formerly of Wister, is now located in Poteau, where he will occupy the office of the late Dr. Harrell Hardy.

DR. S. ERNEST STRADER, Oklahoma City, recently convicted of a narcotic charge, was acquitted when his case was reversed for another trial.

DRS. W. ALBERT COOK, Tulsa, and McLAIN ROGERS, Clinton, attended the annual meeting of the American Medical Association at Atlantic City in June.

DR. JOHN F. PARK, McAlester, and WALTER J. DELL, technician, Lattimore Laboratories, also of McAlester, are spending the summer months doing post graduate work at the University of Vienna. They expect to return the latter part of August.



## NEW DENTAL BOARD

The new State Dental Board, created by the last legislature, was appointed by Governor Marland by districts as follows:

District No. 1—Dr. H. H. Deatherage, Wagoner.  
 District No. 2—Dr. W. S. Phillips, McAlester.  
 District No. 3—Dr. J. P. Neal, El Reno.  
 District No. 4—Dr. J. M. Hill, Mangum.  
 District No. 5—Dr. W. C. Travis, Chickasha.  
 District No. 6—Dr. S. P. Boyer, Tulsa.  
 District No. 7—Dr. B. C. Singleton, Checotah.  
 District No. 8—Dr. L. M. Cheek, Ada.  
 District No. 9—Dr. W. T. Longwell, Frederick.  
 Doctors Neal and Longwell will serve three years, the other members two years.

## CORRECTIONS—1935 ROSTER

## Stephens County

Long, D. .... Duncan

## Woodward County

Newman, M. Haskell ..... Shattuck  
 Patterson, Fred L. .... Carnegie  
 Winchell, F. Z. .... Buffalo

*News of the County Medical Societies*

WOODWARD County Medical Society met June 11 as guests of the Hospital Staff of the Western Oklahoma Hospital, Supply.

Lunch was served at noon and the following papers were read and discussed:

"The Toxic Thyroid"—J. H. Robinson, Oklahoma City.

"Early Diagnosis of Malignant Tumors"—Wm. H. Bailey, Oklahoma City.

"Thirteen Known Cases of Huntington's Cholera in One Family"—H. L. Johnson, Supply.

The Ladies' Auxiliary had a meeting in the afternoon, entertaining the doctors' wives.

SOUTHERN OKLAHOMA MEDICAL ASSOCIATION held their twenty-seventh quarterly session June 4th at the Soldiers' Tubercular Sanitarium at Sulphur. The following papers were presented:

"Childhood Tuberculosis and Tuberculin Tests"—F. B. Baker, Tahihina.

"Differential Diagnosis of Tuberculosis and Non-Tubercular Chest Diseases"—R. M. Burke, Tahihina.

"Demonstrations of Chest Diseases with X-Ray Pictures"—J. S. McDonald, Tahihina.

"New Deal in Public Health"—Chas. M. Pearce, Oklahoma City.

"Pre-Natal Care"—Hugh Monroe, Lindsay. Discussion by J. M. Gordon, Ardmore.

"Purpura Hemorrhagica"—J. B. Morey, Ada. Discussion by Hugh Jeter, Oklahoma City.

"The Ruptured Appendix, Its Management"—W. T. Mayfield, Norman. Discussion by R. C. Sullivan, Ardmore.

"The Laboratory and the Doctor"—John D. Campbell, Duncan. Discussion by W. H. Bailey, Oklahoma City and A. J. Weedn, Ardmore.

"Fever Therapy—Its Possibilities and Limitations"—Anson Clark, Oklahoma City. Discussion by Guy Van Sandt, Wewoka, and G. S. Barger, Purcell.

SOUTHEASTERN OKLAHOMA MEDICAL ASSOCIATION met June 27th at Durant. The following scientific papers were presented:

"Obstetrics and Some of the Most Common Everyday Complications"—R. H. Sherrill, Broken Bow.

"Whooping Cough"—T. H. McCarley, McAlester.

"The Management of Genito-Urinary Diseases by the General Practitioner"—C. R. Huckabay, Idabel.

"Hand Infections"—S. D. Bevil, Poteau.

"The Acute Abdomen"—J. T. Colwick, Durant.

"Lymphoid Tissue"—B. B. Kies, McAlester.

The invocation was presented by Rev. R. T. Blackburn of the First Methodist Church, Durant. Dr. H. B. Fuston, Durant, delivered the address of welcome which was responded to by Dr. F. P. Baker, Tahihina. The annual election of officers was held at the close of the meeting.

## DR. HARRELL HARDY

Dr. Harrell Hardy, prominent Poteau physician and well-known in medical circles throughout Eastern Oklahoma and Western Arkansas, died at St. Edwards Mercy Hospital, Fort Smith, Wednesday morning, May 22, at 3:30 o'clock as the result of complications which followed an appendectomy.

Dr. Hardy became ill suddenly Saturday night, April 27, and was operated on the following day. He showed remarkable strength throughout his illness, but his death was not unexpected.

Dr. Hardy has practiced medicine in LeFlore County for 28 years, and was one of the most loved men in this section. He was born in Pulaski, Tenn., March 11, 1882. Following his graduation from Louisville Medical College, Louisville, Ky., he moved to Oklahoma and started practicing medicine at Sutter.

In 1909 he was married to Miss Robbie Malone of Coal Hill. They moved from Sutter to Bokoshe, and then later to Poteau, where they have resided since that time.

Dr. Hardy was a member of the LeFlore County Medical Society and was active in the work of that society. He served as president for two different terms, and at the time of his death was secretary-treasurer of the organization. He was also a member of the local Presbyterian Church.

A large crowd gathered at the Presbyterian Church in Poteau to pay final tribute to Dr. Hardy. Rev. W. W. McConnell, pastor of the First Methodist Church, officiated at the brief funeral service. A boys' quartet composed of Ralph Williams, Jim Kidd, Edward Kidd and Sam Harris sang "One Sweetly Solemn Thought" and "Lead, Kindly Light".

Immediately following the service, the funeral cortege left for Fort Smith. Burial was in Forest Park cemetery.

Honorary pall bearers were his fellow members of the LeFlore County Medical Society. Active pall bearers included men who were members of the Neighborhood Bridge Club to which Dr. Hardy belonged—E. G. Goodnight, Charles Sigmon, Preston Wood, John Youmans, John Oxley and Alex White, and Milburn Babb and Charles Lyons.

In addition to his wife, Dr. Hardy is survived by one sister, Mrs. Rowe Phillips of Prospect, Tenn., and a brother, Mr. George Hardy, of Pulaski, Tenn.

## DR. G. O. DUNSETH

Dr. G. O. Dunseth, 57, Tulsa physician, died today at his home, 5510 S. Owasso Ave., from pneumonia after being in ill health since September.

Doctor Dunseth came to Tulsa four years ago from Bartlesville where he had resided four years. He was born in Craig, Mo., and had resided in Nebraska most of his life, having lived at Sumner before coming to Oklahoma.

Survivors include the widow, Mrs. Kathleen Dunseth, and a daughter, Miss Ellen Dunseth, a graduate of the University of Tulsa, both of the home address; two brothers, Amery Dunseth of Kiewana, Ind., and Walter Dunseth of Mitchell, South Dakota. His mother, Mrs. Elizabeth Dunseth, also resides in Kiewana.

He was a member of the Odd Fellows and the Knights of Pythias of Bartlesville and of the United Brethren church of Tulsa. Funeral services will be conducted Wednesday at 11:00 A.M. from the Tulsa Undertaking Co. chapel with Rev. A. E. Moore, his pastor, in charge. The place of burial is undecided.—Tulsa Tribune, May 20.

## DR. FRANK ROBERTSON

A paralytic stroke brought death to Dr. Frank H. Robertson, prominent business and professional man, at his home at Blackwell, Tuesday, May 21. He had been in ill health the past two years. Dr. Robertson went to Blackwell about a year after the opening of the Cherokee strip and established a jewelry store and optometrist shop on North Main street.

During his many years of residence there he was active in the Christian church, the Rotary Club, the National Guard Unit and in the Masonic bodies.

He is survived by the widow; a son, William J. Robertson of Oklahoma City; a daughter, Myra, of Blackwell; a brother, Dr. J. Q. Robertson of Tonkawa, and a sister, Mrs. Mabel Caldwell of Steamboat Springs, Iowa.

Funeral services were conducted at the home in Blackwell. Burial was in the Blackwell I. O. O. F. cemetery.

## DOCTOR THOMAS J. COLLEY

Doctor Thomas J. Colley, Hominy, died at St. John's Hospital, Tulsa, Tuesday, June 4, 1935, cause of death being coronary occlusion. He had been ill several weeks.

Dr. Colley was born May 22, 1871, at Birchleaf, Va. He graduated from the University of Virginia Medical School and practiced a few years in Virginia. He came to Hominy in 1910 and has been in active practice there

since that time. He had many friends in the profession and among the laity and his reputation as a physician and surgeon was widely known. Dr. Colley was always an enthusiastic and tireless civic worker.

He was a Mason, a member of the Baptist church and a Kiwanian. He was a past president of the Osage County Medical Society.

Dr. Colley was sixty-four years of age at his death. He is survived by his wife, one son and one daughter. Funeral services were held in Hominy, June 6. Burial was in Hominy.

## Resolution

Whereas, The Osage County Medical Society having lost one of its members. Dr. T. J. Colley, who answered the call of the Great Physician, June 4, 1935, and;

Whereas, The Society feeling its loss of one of the veterans in the medical profession and especially in losing as distinguished a member as Dr. Colley, who was a worthy citizen, a capable physician and an honor to his profession;

Therefore, Be it Resolved by the Osage County Medical Society that our sincere sympathy be extended to his beloved family and to his many friends.

Be It Further Resolved, that these resolutions be spread upon the records of this Society and that a copy be sent to the members of Dr. Colley's family.

M. E. RUST, M.D.  
E. N. LIPE, M.D.  
R. O. SMITH, M.D.  
Committee.

## PASS MEDICAL EXAMINATION

Students who successfully passed medical examinations of the State Medical Board June 5th and 6th:

Paul Sanford Anderson, Claremore, Okla.  
Oscar J. Binde, Ponca City, Okla.  
F. C. Buffington, Garber, Okla.  
C. Sam Beaty, Oklahoma City, Okla.  
Harry E. Barnes, Oklahoma City, Okla.  
Clyde J. Barker, Jr., Oklahoma City, Okla.  
George S. Bozalis, Oklahoma City, Okla.  
Charles Joseph Brady, Oklahoma City, Okla.  
James Thomas Bell, Welch, Okla.  
Robert Emmett Cowling, Oklahoma City, Okla.  
Glenn J. Collins, Elmore City, Okla.  
Curtis B. Cunningham, Oklahoma City, Okla.  
Earle A. Casey, Oklahoma City, Okla.  
Harry R. Cushman, Clinton, Okla.  
William W. Cotton, Oklahoma City, Okla.  
Paul Joseph Collopy, Oklahoma City, Okla.  
John Hoyle Carlock, Jr., Ardmore, Okla.  
Ross Deputy, Oklahoma City, Okla.  
John B. Davis, Oklahoma City, Okla.  
William Paul Elkin, Edmond, Okla.  
Elesworth L. Gardiner, Hollis, Okla.  
Howard Glenn Gardiner, Oklahoma City, Okla.  
William Hampton Garnier, Okmulgee, Okla.  
Paul W. Gutsche, Oklahoma City, Okla.  
Charlie Wendell Haygood, Stilwell, Okla.



John Louis Homer, Oklahoma City, Okla.  
 Miriam Hubbell, Oklahoma City, Okla.  
 Grace Clause Hassler, Oklahoma City, Okla.  
 Thomas F. Harmon, Sallisaw, Okla.  
 James Hamilton, Greensburg, Pa.  
 William K. Ishmael, Oklahoma City, Okla.  
 L. G. Johnson, Oklahoma City, Okla.  
 John Thomas Kramer, Jr., Broken Arrow, Okla.  
 Claude B. Knight, Oklahoma City, Okla.  
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 Warren Elmer Parker, Oklahoma City, Okla.  
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 James Richard Raines, Hinton, Okla.  
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 William Ray Turnbow, Drumright, Okla.  
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#### THE SYNDROME OF THE ANTERIOR CHOROIDAL ARTERY

Albert T. Steegmann and David J. Roberts, Cleveland (Journal A. M. A., May 11, 1935), report the case of a 17-year-old boy presenting the syndrome of the anterior choroidal artery which consists of a hemiplegia, hemianesthesia and hemianopia contralateral to the side of the lesion in the central nervous system. The spontaneous subarachnoid hemorrhage gave rise to the syndrome that was present shortly after the onset of the illness, as well as to the fever and signs of meningeal irritation. The pain in the right eye was probably due to the irritating effect of the blood in the subarachnoid space on the ophthalmic branch of the trigeminal nerve. Pain in the right eye followed by headache had occurred seven years previously but had not been followed by other symptoms. The question of the relationship of trauma, which occurred two and one-half months before the cerebral insult, is of doubtful significance. The clinical picture in simple occlusion of the anterior choroidal artery is variable, depending on the site of occlusion. When hemorrhage occurs, as in the authors' case, the analysis is even more complex, because of the factors that pressure, ischemia and edema play in the process. The clinical facts indicate that the maximal damage was done in the region of the lateral geniculate body and the area in which the optic radiations begin. The area of the most posterior portion of the internal capsule was involved in the process of a lesser extent. The most reasonable explanation of the clinical picture would be to assume that a rupture of the anterior choroidal artery itself occurred near the anterior pole of the lateral geniculate body. The infiltration of blood into the subarachnoid space could produce an irritating effect on the ophthalmic branch of the fifth nerve and thus explain the entire clinical picture. A question that arises is whether this symptom picture could be produced by lesions resulting from the occlusion of other cerebral vessels. The studies of Charles Foix show that hemianopia due to a

lesion of the right sylvian artery is accompanied by a monoplegia of the arm or a hemiplegia predominating in the arm. The hemianopia is of a lower quadrant type. A total sylvian artery occlusion is fatal in a short time. On the other hand, a lesion from an occlusion of the posterior cerebral artery produces an upper quadrant hemianopia with an associated thalamic syndrome. A light form of hemiplegia and cerebellar signs may also occur, according to Poppi. The authors believe that their case fits more into the picture of the syndrome of the anterior choroidal artery. In cases in which no anatomic studies are possible, a better descriptive clinical term would be the geniculocapsular syndrome.

#### o THERAPY OF THE COOK COUNTY HOSPITAL: THERAPY OF CHANCROID AND BUBO

Bernard Fantus, Chicago (Journal A. M. A., Dec. 15, 1934), in presenting the therapy of chancroid and bubo as it is practiced by the attending staff of the Cook County Hospital, points out that chancroid and its bubo be differentiated from (1) syphilitic infection, (2) fusospirochetal balanitis, (3) granuloma inguinale, (4) lymphogranulomatosis inguinale, (5) herpes progenitalis and (6) epithelioma. In the diagnosis a few days after exposure there is a soft, flabby erosion and then an ulcer, which is inflammatory, painful and tender. It may be single or multiple and has an irregular, undermined border and an uneven base covered by a dirty purulent exudate. The streptobacillus of Ducrey can be found in the exudate.

#### o RETROPOSITION OF THE TRANSVERSE COLON

P. E. Truesdale, Fall River, Mass. (Journal A. M. A., May 11, 1935), states that an abnormal position of the intestinal tract is the result of some disturbance of migration, rotation, descent or fixation during embryonic life. Perhaps the rarest of all developmental anomalies of the colon is retroposition of the transverse colon due to inverted rotation of the midgut during the tenth week of embryonic life. In the few cases assembled from the literature the transverse colon dips back into a tunnel behind the duodenum and superior mesenteric artery. Some constriction through torsion of the mesentery or pressure on the transverse colon then causes intestinal obstruction. The cecum and ascending colon become markedly dilated, and in some cases complicated by common mesentery the ileum is also strangulated in folds of mesentery. In the two cases cited, death was caused by cancer and tuberculosis, retroposition of the colon was discovered at necropsy. These cases of retroposition of the transverse colon are to be differentiated from cases of torsion on the peduncle of mesentery with ensuing volvulus of a segment of large intestine or, in rare instances, of the entire small intestine as well. Volvulus occurs after development is complete, as a result of torsion of the mesentery. The intestine can be restored to its normal position through detorsion anticlockwise. Several cases of volvulus result in a position of colon and small intestine almost identical with those of true retroposition. Some cases are hard to diagnose. It is apparent from end results that, when acute intestinal obstruction occurs, surgical intervention is imperative. The patient's condition, however, contraindicates radical measures, such as an anastomosis or resection, until the patient has recovered from the acute obstruction. Preliminary cecostomy can be done with less risk, and after normal evacuation of the intestine has been established further surgical measures may be undertaken to relieve constriction and correct torsion of the intestine or mesentery. In all cases treated by radical operation the prognosis is discouraging.

# ABSTRACTS «» REVIEWS «» COMMENTS AND CORRESPONDENCE

## DERMATOLOGY, RADIUM AND X-RAY THERAPY

Edited by William E. Eastland, M.D.  
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Roentgen Irradiation in the Treatment of Mammary Carcinoma. U. V. Portmann, M.D. *American Journal Roentgenology and Radium Therapy*, Vol. XXXI, No. 1, January, 1934, 46-50.

The author states that in 85% of all cases operated mammary carcinoma the axillary lymph nodes are already involved. He believes that the most important region for the use of radiation is the axillary and supraclavicular region in which surgical removal of tissue is difficult. At these sites he advocates the use of 200 kv. with a filtration of .5 mm. cu. or more at a 50 cm. focal skin distance. From 1000 to 1200 r are given at these areas, and in about three months this is repeated and a third application is given four or five months after the second treatment, thereby producing a total of 2400 to 3000 r within less than a year after the operation. In case the lesion is over the breast, where it has been amputated, he advises the use of 140 kv., as he believes the quality of radiation derived from the low voltage is as valuable as the high voltage and does not endanger pulmonary structures. The low voltage fields are given 800 r each at the first treatment.

In conclusion the author states that he believes an attempt should be made not only to attack the malignant cells, but also to preserve and enhance the defense of the patient against the invasion of neoplasm by taking into consideration the environment of the growth as it is influenced by physiologic processes; in other words, he emphatically states that low voltage, that is, 140 kv., should be given over the chest wall per se.

Irradiation in the Treatment of Fibromyoma of the Uterus. George E. Pfahler, M.D., Sc.D., and Jacob H. Vastine, M.D. *American Journal Roentgenology and Radium Therapy*, Vol. XXXI, No. 1, January, 1934, 51-59.

The authors have presented a very valuable article inasmuch as it is based upon a large number of cases and it covers clinical material to such a degree that it makes a valuable contribution to the literature. The authors have summed up the article as follows: (1) A review of about 15,000 cases of uterine fibroids collected from the literature, including their own cases, shows a curative value of irradiation treatment of about 95%. By "cure" is meant relief from hemorrhage and disappearance or reduction of the tumor to a size such that it does not give symptoms. (2) Irradiation is the method of choice in practically all cases in which the tumor does not extend more than midway between the symphysis and umbilicus. (3) In small fibroids radium treatment is usually sufficient, but in the same group of cases deep roentgen therapy is also successful. The treatment can now be given without any serious risks. (4) In small fibroids occurring after 40 years of age, and especially if

there is any intermenstrual bleeding, it is their present practice to do dilatation and curettement and at the same time insert the special applicator containing 150 mg. of radium for about 24 hours, and if the lesion is found to be malignant the applicator is left for 48 hours. (5) High voltage roentgen rays are especially useful in the treatment of the larger fibroids due to the more direct and homogenous effect on the fibroid itself.

Some Problems in Radiation Therapy of Carcinoma of the Cervix. William P. Healy, M.D., F.A.C.S. *The American Journal Roentgenology and Radium Therapy*, Vol. XXXI, No. 1, January, 1934, 60-63.

Dr. Healy points out that in a study of 1574 cases of cancer of the cervix at the Memorial Hospital in New York City, they found 12.5% of the cases classified as "early" in that the growth appeared to be limited to the cervix. Had these cases truly been early they would have responded to either cauterization, hysterectomy or irradiation. It was evident that the clinical diagnosis was in error by reason that only 55% gave 5-year cures. In such cases the use of radiation therapy caused the primary lesion of the cervix to disappear in 4 to 6 weeks, giving an apparent cure, but within a year or two afterwards evidences of metastases were noticeable by various other symptoms. In the event the cervical lesion failed to disappear in some 4 or 5 weeks they then resorted to interstitial irradiation by means of gold filtered radon seeds. If in another 4 to 6 weeks the lesion still failed to heal, either vaginal or abdominal hysterectomy was used, not as a means of a curative measure but as a palliative one to prevent hemorrhage, fistula, etc. Dr. Healy states that the greatest problem is to find a way to sterilize all of the vagrant cells or metastases as well as the primary lesion. His results show that the average percentage of 5-year cures for all cervical cancer cases, regardless of the stage of development, is 20 to 22%. With this in mind he reviewed the improvement as obtained by Regaud at the Radium Institute in Paris. In 1924 that institution increased the dosage of external irradiation with deep x-ray therapy, thereby producing a 35% cure of all cases as compared to a 24% cure previously obtained. Attention is called to the fact that at least 75% of all cases of cancer of the cervix are in an advanced stage when they are first seen. The essayist stresses several things: (1) The necessity of properly taking care of all local infection in the vaginal vault prior to the administration of radiation; (2) the advantage of an increased number of deep x-ray exposures; (3) the necessity of improving the radiation technic which will enable more of an effect on the metastatic lesions in the parametrium.

Data Concerning Three Years' Experience With 600 Kv. (Peak) Roentgen Therapy. Seeley G. Mudd, M.D., Clyde K. Emery, M.D., Orville M. Meland, M.D., and William E. Costolow, M.D. *American Journal Roentgenology and Radium Therapy*, Vol. XXXI, No. 4, April, 1934, 520-31.

It is the purpose of the authors in this essay to bring a preliminary report in regard to higher volt-



age in deep x-ray therapy, namely, the 600 kv. technic. Only 285 cancer patients have been treated by this method and the time elapsed has been three years and, therefore, no definite and final conclusions have been made. However, they are able to make some observations of passing value. The anatomical structures particularly treated in this process are the bladder, prostate, rectum, oesophagus, larynx and pharynx. In their work they compared the reaction obtained on the skin with the 200 kv. technic, and also they varied their filtration while using the 600 kv. technic with two different thicknesses of filter. The results of this experimentation showed that they were able to use the higher voltage technic with the same impunity to skin tissue as the lower voltage technic, and at the same time deliver a more effective dose to deeper structures. The advantages of this type of radiation are: (1) Lower cost to the patient because of the comparative inexpensiveness of roentgen therapy apparatus as compared to a 4-gram pack of radium; (2) approximation of biological results as obtained by the 4-gram pack of radium, that is, gamma radiation. At various localities this deeper type of more powerful voltage technic is being tried and it remains for results in future years to be shown before final and conclusive results can be given; in other words, it is undecided as yet as to whether or not there is any superior value in the higher voltage machines than in the standard deep x-ray therapy of today which uses 200 kv.

**A New Method for the Treatment of "Bleeding Nipple" by Radium Implantation.** Max Cutler, M.D. *American Journal Roentgenology and Radium Therapy*, Vol XXXI, No. 6, June, 1934, 819-22.

The problem of "bleeding nipples" is divided into two classes: First, treatment of those breasts which show a serous or serosanguinous discharge from the nipple in which there is no palpable tumor; second, those with such a discharge with a palpable tumor. In the latter instance the case should be regarded as malignant and handled according to the standard methods used for such treatment. In the former instance the problem becomes greater, for here there is bleeding where no palpable tumor can be detected. Cutler has demonstrated (in 1929) the use of transillumination in localizing papillomata which occur in the milk duct and these serve as the origin of bleeding. It is not always possible to localize these papillomata by transillumination but when it is so it is a distinct aid. The possible development of a malignancy in such papillomata is of sufficient incidence to warrant treating these cases. It seems that complete excision of the breast without removal of the pectoral muscles or dissecting out the axillary nodes is most desirable. In certain cases patients object to this operation without more definite evidence of the potential malignancy developing. Also, the advisability of performing such an operation in younger subjects is questionable, especially in view of the fact that they are quite removed from the age in which cancer is more likely to develop. With these various thoughts in mind the author brings up the consideration of radiation treatment in "bleeding nipples". He denounces the use of external radiation as being practically without value. He advocates the use of interstitial radiation in the form of platinum removable needles. Two cases are cited in which platinum radium needles were used, the first in a patient of 45 years of age who had experienced a "bleeding nipple" for several years, and the second a patient 41 years of age who had a "bleeding nipple" for 6 months. In both instances the discharge was completely stopped.

## INTERNAL MEDICINE

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By HUGH JETER, M.D.

**The Present Status of the Problem of "Rheumatism": a Review of Recent American and English Literature on "Rheumatism" and Arthritis.** By Philip S. Hench, M.D., F.A.C.P., Rochester, Minnesota; Walter Bauer, M.D., F.A.C.P., Boston; Almon A. Fletcher, M.D., Toronto; David Ghrist, M.D., F. A. C. P., Los Angeles; Francis Hall, M.D., F.A.C.P., Boston, and Preston White, M.D., Charlotte, N.C.

Chronic arthritis, a form of "rheumatism," is said to be one of the greatest causes of disability in temperate climates. It is also one of the oldest recorded diseases. But in spite of this fact there has long existed an attitude of pessimism concerning it.

In 1924 the "Ligue Internationale Contre le Rheumatisme" was formed. Since then many national committees have been created, one being the American Committee for Control of Rheumatism established in 1928. Interest, clinical contributions and experimental investigations of merit have all become very widespread. This paper is a review of or a synopsis of facts from various workers in different countries and is by request of the American Committee for the control of Rheumatism.

### Rheumatism as a Public Health Problem.

The British Ministry of Health report shows the following: Of 91,000 insured persons (58,000 males, 33,000 females) 2.8 per cent consulted a physician for rheumatism yearly. Thus about 30 of each 1,000 insured men and 22 of each 1,000 insured women suffered from some kind of rheumatism during the year. On the basis of these figures it was estimated that in England, with an insured population of 16,000,000 persons, more than 400,000 of them in any given year suffered from one form of rheumatic disease. It produces one-sixth of the total industrial invalidism. The cost for one year (1927) was estimated from \$85,000,000 to \$100,000,000.

Metropolitan Life Insurance Company estimates that in the United States 164 persons per 100,000 suffer from rheumatism. This constitutes 9 per cent of all cases of illness. Other interesting figures are given.

### Industrial Aspects of Rheumatism.

Occupation may have a direct or indirect relationship to the appearance of rheumatism. The worker's age is important. Seventy-five per cent of industrial workers over 40 years of age suffer from rheumatism. Trauma may cause rheumatism or furnish the basis for an endogenous development. There are many specific types, such as "glass arm" of ball players, "tennis elbow," "golfer's arm," "baseball fingers," "weaver's bottom," "housemaid's knee," "policeman's heel," etc.

### Diseases of Joints Due to Infections of Known Type.

The following are discussed: Acute pyogenic arthritis (septic joints); gonorrheal arthritis and synovitis; tuberculous arthritis; syphilitic disease of joints and bursae; typhoid arthritis, and arthritic complications in certain rare diseases such as dengue, melitococcosis, undulant fever, Bang's disease, yaws, and leprosy.

### Rheumatic Fever

This condition goes in cycles of 3 to 5 years. Eu-

ropean writers state that it is chiefly a disease of the poor. In England, 250,000 out of 5,000,000 school children suffer from rheumatism (Clarke).

Considering the question of economic status as a predisposing factor, Davis compared the curve of yearly incidence of rheumatic fever in a New York hospital population to the curve of retail commodity prices in the United States and was unable to conclude that fluctuations in economic welfare produced by "boom years" and depression had any influence on morbidity due to rheumatic fever.

The condition is more common in severe and colder climates than in warmer parts, and is extremely uncommon in the tropics, being rare in Louisiana and Georgia, and half as common in Virginia as in Massachusetts (McLean).

#### Course and Symptoms.

Frank characteristics of the disease are tonsillitis and pharyngitis, chorea, arthritis, nodules, and carditis. Coburn uses the term "the rheumatic state". Dally favors Cheadle's (1889) term "the rheumatic series".

The disease presents the following clinical forms: (1) Cardiac, (2) arthritic, (3) muscular, (4) nervous, with chorea and occasionally "cerebral rheumatism," (5) pseudosurgical, the type which is ushered in with symptoms indicating an acute abdominal condition, and (6) septicemia.

#### Natural Course of the Disease Untreated.

Graef and others after observation of a group of patients that had had no treatment concluded "specific therapy (tonsillectomy, salicylates, etc.) has not been proved and that an evaluation of any further treatment must be based on a comparison with such a basic study as is here reported.

#### Laboratory Data.

Evidence is given that the changes in the sedimentation rate are almost parallel with the varied progress and clinical alterations of the disease. (Payne, Bach and Hill, and Poynton.)

Master and Jaffe, who made daily electrocardiographic studies in 63 cases, found definite evidence of myocardial involvement in 100 per cent.

#### Subcutaneous Nodules.

Those of rheumatic fever are closely related to, if not identical with, those found frequently in atrophic arthritis.

#### Etiology.

The cause of rheumatic fever has not been determined. There are three general theories: (1) Infection, (2) endocrine, (3) metabolic or chemical.

Controversy still exists as to the specificity and practicability of agglutination tests. The evidence presented by various observers is contradictory.

Skin tests are based upon the assumption that tissues are allergic to streptococcus viridans. Work of considerable theoretical interest is reported in this connection.

#### Experimental Arthritis.

This route of investigation has failed to give valuable information.

#### Treatment, Salicylates.

Master and Romanof studied the course of the disease in 30 cases of rheumatic fever in which patients were not given salicylates and in 33 cases in each of which they had 120 to 180 grains of salicylates daily. One hundred per cent of each group developed heart involvement on the basis of electrocardiograph-

ic alterations. The course of the disease and the appearance of pericarditis and other complications were about equal in both groups. There was no material shortening of the stay in the hospital. Intravenous medication is probably not any more efficacious than per os administration. Various other drugs and their effects are revealed.

#### Tonsillectomy.

There are still considerable differences of opinion as to the value of tonsillectomy in the treatment and prophylaxis of rheumatic fever and carditis.

#### Vaccines, Antigens, Serums.

There are opinions on the value of the newer bacterial products in the immunization and desensitization of rheumatic fever which have not been re-stated during the past two years by the originators.

X-ray treatment is of doubtful value.

#### Comment.

The following tables are given: (1) Tentative classification of diseases of joints and related structures. (2) The bacterial variants of the infectious theory of rheumatic fever. (3) Infectious theory of rheumatic fever.

I believe this is the most comprehensive report on "rheumatism" that has ever been written. This is an abstract of Part 1 only. The abstract of Part 2 and Part 3 will be abstracted for future dates.

By C. E. BRADLEY, M.D.

A Rapid Method for the Identification of Diphtheria Bacilli. Also a New Method for Identification of Carriers of Diphtheria Bacilli. M. Bernard Brahdy, M.D., Mount Vernon, N. Y.; Maurine Lenarshky, M.D., Lawrence W. Smith, M.D., and C. A. Gaffney, M.D., New York. J.A.M.A., Volume 104, No. 21, May 24, 1935, Page 1881.

Because it is generally conceded that the earlier the antitoxin is given in cases of diphtheria the better the prognosis and because with the generally accepted and practiced methods of identification of the diphtheria bacillus much time is lost in confirming a clinical diagnosis and in the administration of the antitoxin, the authors have studied carefully and here present a rapid and accurate method for the identification of the diphtheria bacillus.

The method is very simple as well as rapid and accurate and can be carried out without elaborate laboratory equipment. It is interesting to note that the method was first described 36 years ago by Folger at a medical meeting in Carinthia, and since that time has been corroborated by the work of Sole and the authors of this paper. Folger's original work has never been published.

The method consists of immersing and saturating sterile cotton swabs with sterile horse serum, and removing the excess by pressing against the sides of the tubes. They are then lightly heated over a flame to obtain surface coagulation, and possibly to destroy the antibodies in the serum. The swabs are then used to take nose and throat cultures in the usual manner. Instead of innoculating a culture medium, the swab is placed in a sterile test tube and incubated from two to four hours. Experimentation has shown that four hours gives the maximum growth. Smears made directly from the swab are stained by methylene blue or Ponder's stain. The cultures may be incubated in the physician's vest pocket if a mechanical incubator is not available.

In order to measure the efficiency of this method



as compared with cultures made on Loeffler's blood serum medium, which is in general use, the authors took the following cultures from 68 separate cases of clinical diphtheria: rapid method cultures, from the nose and throat, which were examined at the end of two and four hours respectively, and one which was transferred to a Loeffler's slant at the end of four hours and then incubated and used for fermentation tests and virulence tests in guinea pigs; two cultures on Loeffler's slants that were sent to two different laboratories.

The results of these experiments were tabulated and a survey of them shows that the rapid method cultures were slightly more sensitive than the cultures by Loeffler method, and that in no instance was the Loeffler method positive and the rapid method negative.

Controls consisted of 28 patients with non-diphtheritic membranes due to streptococci, Vincent's, etc. In three of these cases, in which cultures by Loeffler method were negative, the rapid culture was positive and the bacilli isolated were of a virulent strain. One of the three patients had a negative Schick and was apparently a carrier with a non-diphtheritic membrane in the throat. Another had received antitoxin on his admission to the hospital when he had a temperature of 103; the temperature gradually receded and he was discharged in five days. The third patient had an exudate on her tonsils and a temperature of 103. Some of the physicians thought that she had diphtheria and some thought that she did not. At least these patients did harbor virulent diphtheria bacilli, a fact entirely missed in the Loeffler cultures.

The authors have presented a method by which a culture pure enough for animal inoculation is obtained in 24 hours; a saving of from two to five days in performing a virulence test. Moreover, the method is more accurate than the method now in use, culture on Loeffler's blood serum medium.

(Note: Within a few months the method will be further simplified. Through the cooperation of a commercial laboratory, the authors announce, a culture set ready for immediate use will be made available.)

**Breast and Artificially Fed Infants. A Study of the Age Incidence in the Morbidity and Mortality in Twenty Thousand Cases.** Clifford G. Grulee, M.D., Heyworth N. Sanford, M.D., Chicago, Harry Schwartz, M.D., Kenosha, Wis. J.A.M.A., Vol. 104, No. 22, June 1, 1935, Pg. 1986.

The authors present a study of two thousand breast and bottle fed infants from one to nine months of age. The children were studied in an effort to determine the relative incidence of gastrointestinal and respiratory infections and death in children who were breast fed, partially breast fed, and artificially fed.

Their results show that breast milk evidently guards the baby against gastrointestinal as well as respiratory infections, and that the morbidity gradually increases to the fifth month in the breast and partially breast fed infants, and gradually decreases after the seventh month. In the artificially fed infants the morbidity rises steadily through the ninth month.

The mortality rate shows that breast fed children are in danger only in the first two months, while the mortality rate of artificially fed infants increases to the ninth month.

**Acute Lymphatic Leucemia in Childhood. A Study of Sixty Cases With Especial Reference to the Cytologic Characteristics of the Blood.** Stephen D.

Mills, M.D., Rochester, Minn. The Journal of Pediatrics, Vol. 6, No. 5, May, 1935, pg. 634.

Because acute lymphatic leucemia, although it is relatively uncommon, occurs quite frequently in children, the author felt that the blood picture and prognosis of the disease should be studied further.

A review of the literature suggests that the incidence of the disease is greater among males than females particularly in children from one to four years of age.

The author suggests that routine morphologic study of the blood among patients with weakness, pallor, cachexia, unexplained fever, and enlargement of the lymph nodes will frequently establish the diagnosis early in the course of the disease. Because the clinical features are sometimes obscure an examination of the blood may be the only means of diagnosis. Therefore it should be carefully made and the typical blood picture of the disease should be carefully noted.

The author presents a summary of normal blood findings in infants, and then his observations of the blood picture of 60 cases of acute lymphatic leucemia.

#### Studies of the Blood in Acute Lymphatic Leucemia.

Secondary anemia, with low values of the hemoglobin and erythrocytes, was the rule. Few other conditions present a long standing secondary anemia in childhood. In most cases the concentration of hemoglobin was about 30 per cent by Dare's method with from one to two million erythrocytes per cubic millimeter of blood. Normoblasts, polychromatophilia, and anisocytosis were usually present, thereby differentiating the anemia from the aplastic type, which however sometimes occurs in the terminal stages of acute leucemia.

The leucocyte counts in this series of sixty cases of acute lymphatic leucemia varied from 3,350 to 28,400 per cubic millimeter. The median line was about 10,000 per cubic millimeter. The outstanding feature of the leucocyte count was that a third of the patients had a leucopenic phase sometimes during the course of the disease; this is of course contradictory to the general conception of the leucocyte count in acute lymphatic leucemia. The presence of definitely immature lymphocytes in the peripheral circulation established the diagnosis of acute lymphatic leucemia in every case when it was followed for a sufficiently long time.

#### Morphologic Characteristics of the Leucocytes in Acute Lymphatic Leucemia.

The morphologic characteristics of the leucocytes in six cases which were followed for 3 months all show immature leucocytes.

One type of cell, approximately 12 microns in diameter, with a bluish rim of cytoplasm, hardly distinguishable at times, was differentiated from a normal lymphocyte only by a careful scrutiny of the arrangement of the chromatin in the nucleus. The chromatin was arranged in fine strands sharply demarcated from the parachromatin or occasionally it had a stippled appearance; nucleoli were often seen in the nuclei.

Other lymphocytes showing indented, notched, cleft, bisected, or lobulated nuclei were also observed; the more immature the lymphocyte the more irregular the nuclei will be. Cells classed as Rieder forms were frequently observed. Plasma cells, though frequent were not consistently observed, so their significance cannot be stated.

A shift to the left with toxic changes in the polymorphonuclear leucocytes was not uncommon. Since

immaturity often appeared in the myeloid and lymphatic series at different times, it was necessary to study the cases over a fairly long period to see in which series it predominated.

The erythrocytes exhibited the usual picture of secondary anemia with anisocytosis, polychromatophilia and the presence of reticulocytes and normoblasts.

A low platelet count was observed in all cases and a rise in this count seemed to be coincident to improvement.

**Effect of Transfusion:** A rapid rise in the hemoglobin and a less rapid rise in the erythrocyte count followed transfusion. This was accompanied by an equalization of the leucocytes; the number, degree of immaturity, as well as the ratio between leucocytes and lymphocytes, became more nearly normal in three to five days after the transfusion.

**Effect of Radium and Roentgen Therapy:** A rapid decrease in leucocytes, if there had been a leucocytosis, at the expense of the lymphocytes with a slight decrease in hemoglobin and erythrocyte values accompanies radium and roentgen therapy. The effect was more lasting than that given by transfusion and was accompanied by a sense of well-being.

**Effect of Incurrent Infections:** There was no consistent effect by incurrent infections. Occasionally there was an increase in the total leucocyte count with no increase in the neutrophils, and in one case a definite increase in the number of immature lymphocytes was observed, as a result of infection.

#### Terminal Leucocyte Counts.

The leucocyte count in death was followed in sixteen cases and in only one case was there a terminal rise; it was interpreted as a last effort on the part of the overtaxed bone marrow. Usually there was a terminal decrease as the hemopoetic organs collapsed.

The author presents evidence that acute lymphatic leucemia is not necessarily accompanied by a leucocytosis, but that every case has its leucopenic phase; this is particularly important, because often only by a careful examination of the lymphocytes can a diagnosis be made.

### EYE, EAR, NOSE and THROAT

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**Psychogenetic Disturbances of Vision.** Wilhelm Steckel, M.D., Vienna, Austria. *Archives of Ophthalmology*, July, 1934.

Stekel reminds us that we see only what we wish to see; that one notices only what interests one; as, for instance, a surgeon who cannot identify a patient by his face but can remember the cicatrix left by the incision; a pregnant woman notices another woman in the same condition; women in mourning notice others similarly attired; that he himself has difficulty in remembering his patients' faces but that he can recognize them at a distance from their body movements.

An experiment was conducted in the Vienna Psychologic Institute in which a previously prepared play was enacted before an intelligent audience. Each individual was requested to make a report of what he saw and heard. Hardly any two reports were the same and many reported things which they had seen and heard that were absolutely untrue. This brings up the interesting point that every person has a sense

of predilection. He has one sense that dominates all others, the same as he has a defective sense which becomes hypertrophied at the expense of the other. A peasant on hearing Beethoven's Pastoral Symphony visualized a landscape which corresponded almost entirely with what Beethoven must have had in mind. The essayist states that the inner influence of perception can go to the extent of complete blindness, the cessation of all perceptions through the eye. He cites cases of Morton Prince, Hartman, Gutheil, Feldman and Bien to prove his contention.

The essayist tells of his cure of an American lawyer who complained of ocular fatigue and squinting. This patient was also annoyed by stiff collars. The basis of this man's trouble was not a real error in his eyes, but a dream involving his marital life which heretofore had not been successfully analyzed. A patient of this type may present any variety of symptoms. Many times there is a psychic scotoma. Frequently the psychic blindness is somatized by physical inability to see. Numerous etiological factors are mentioned to illustrate the points made from time to time in this publication.

According to Buhler, psychologists now assume eleven senses in the forming of one's perceptions of the world. As mentioned earlier, one sense is hyperdeveloped at the expense of another. It is stated that the French poet Jules Romain was able to produce actual visual images in blind people after having made their sense of touch hypersensitive.

The essayist says: Analysis deals with the ego; it endeavors to sever in the patient's soul what is really part of himself from what is alien, the original from what had been added and acquired. Analysis studies the structure of the soul. It is therefore not a view of life. It can influence a person's views only so far as they have become changed by a pathologic disposition from their original form into the expression of something foreign. Analysis corrects the psychic spectacles and opens one's eyes to what one does not want to see.

He cautions against overlooking real pathological conditions when examining a patient of this kind.

**A Practical Consideration of the Nasal Accessory Sinuses in Children.** Dr. William Mithoeffer, Cincinnati. *The Laryngoscope*, October, 1934.

The difficulties attending a rhinoscopic examination of a child are enumerated. In the past there have been many controversies as to whether or not nasal sinus disease in children was a definite clinical entity. It is now generally agreed that this is true. The very wide opening of the antrum in a young child is one of the important factors in the infection many times resolving itself unaided. In the first two years of life there may occur an acute osteomyelitis of the superior maxilla due to a birth injury or secondary to an antrum infection. Two such cases are mentioned. The essayist attributes an extension of a nasopharyngitis to the nasal accessory sinus infections in children. This brings up the question of the allergic child with his continually irritated mucous membrane which predisposes to frequent attacks of nasopharyngitis and its sequelae. He deplors the unsatisfactory skin sensitization tests. He urges the removal of tonsils and adenoids when indicated, but cautions against the overlooking of a sinus infection which may be present at the time and subsequently neglected. In regard to a mastoiditis the same points are made. In common with other authorities, he agrees that a bronchiectasis will not clear up until the sinus is cured, if it is the etiological factor. Especially, if there is temperature, he advises putting the child to bed, administration of aspirin for the nasopharyng-



itis, if present, the proper diet, free elimination, non-specific protein therapy, alkalinization, the proper nose drops, inhalations and infrared radiation when indicated.

The chronic sinus in the child cannot be treated the same as in the adult. The question of thyroid extract therapy is discussed favorably, particularly when the child presents the picture of constipation, slow pulse, subnormal temperature, dry skin, asthenia, cold hands and feet, enuresis, night terrors and a history of repeated attacks of nasopharyngitis. One of the most important functions of the thyroid gland is that of fixing the calcium salts in the body. A high vitamin diet, well balanced, is a necessary feature in the treatment of a chronic sinus infection. Four points are given for the drill of the child in the proper manner of blowing the nose. Hydrotherapy, including hot baths three times a week with a pound of sea salt or magnesium sulphate is advised. A body massage follows with juniper oil or some lubricating jelly. Adequate rest and supervised exercise are beneficial. Along with the thyroid extract may be given calcium gluconate and cod liver oil. The sugar shortage may be combated by the administration of two teaspoonsful of glucose in weak tea or lemonade twice daily. Irrigation of the antrum is performed with a Fisher's Modified Ringer's solution in the supratubal space, but never in the presence of fever and if there should be a reaction following the irrigation, it is not repeated. If repeated washings do not produce a normal antrum, then surgery is indicated. The type and extent of surgery depends upon the pathology present in each particular case.

The point of prime importance is the prevention of the infection in the first place and when it is present not to dismiss the patient until the acute or subacute infection is definitely cleared. A bibliography accompanies the manuscript.

#### Ionization As a Prolonged Palliative in Vasomotor Rhinitis. A. R. Hollender, M.D., Chicago. Archives of Otolaryngology, April, 1935.

Whether vasomotor rhinitis is a local manifestation of a constitutional allergic state or a symptom of some metabolic, endocrine or nervous disorder has not yet been fully determined, but it is agreed that this type of rhinitis is not a disease entity. It is not a true inflammation but an edema of the membranous tissues characterized by an eosinophilic infiltration. There are no proven cures for vasomotor rhinitis. Assuming an allergic base for the disturbance, the essayist has not observed the beneficial results in his patients that are claimed by some investigators. Under two general headings and numerous subdivisions he outlines forms of non-specific treatment. Warwick and Alden in the United States and Demetriades and Franklin abroad as well as the essayist report satisfactory results by the means of intranasal ionization. They do not claim cures but the palliative effect is evident for quite a period of time.

The essayist has devised his own apparatus which is much simpler in construction and operation than any other heretofore on the market. It is also inexpensive. He uses a one per cent solution of zinc sulphate to moisten the strip with which the nasal passage is packed. His formula is zinc sulfate gr. 150, glycerin oz. 2, water 1 quart. Others prefer a one-half per cent solution of zinc sulfate. The positive electrode in the nose is a flexible zinc wire fastened to a leather head band by suitable connections. Care must be taken that the wire is not in contact with the nasal mucosa. The negative electrode is fastened to some part of the body, prefer-

ably the arm, by means of a band. The adjustments are made with the rheostat at zero allowing no current through. The current is turned on gradually until you have from five to fifteen millamperes for about fifteen minutes, depending on whether it is a child or adult that is being treated. Usually one treatment is sufficient but results should not be despaired of until as many as four treatments have been given without the desired result. There is a pronounced metallic taste and profuse salivation during the treatment. Shortly afterward the patient has the symptoms of an acute coryza. The local reaction does not disappear for about a week but the patient usually feels better in a few days. His clinical experience for 1932, 1933 and 1934 is related. He reports five cases in detail. This method of treatment does not interfere in any way with any other therapeutic measures that might be in the process of execution at the same time. In the past twelve years he has given more than one thousand treatments without any ill effects being noted. His colleagues report similar experiences.

Comment: The objection to the procedure as instigated by Dr. Warwick has been the expense that it entails; both the initial cost of the equipment and the solutions which are used as well as the hospitalization suggested. Dr. Hollender is one of the original investigators in this particular field.

#### Atrophic Rhinitis. James Adam, Glasgow. The Journal of Laryngology and Otology, June, 1934.

This was a special subject of discussion at the International Congress at Madrid in 1932. Little seems to be agreed upon as to its etiology but a mass of literature is available on the last stage of the malady. Twenty-four years ago Dr. Adam gave a paper before the British Medical Association on this subject in which he advanced the theory that atrophic rhinitis was the end stage of a hyperplastic, i. e., inflammatory process, that sinusitis often plays an important part in keeping up the chronicity of the disease, and that this sinusitis is often missed. The paper was based on thirty cases. This present paper is based on an additional one hundred forty-one and supports the claims of the previous paper with the addition that the deficiency of vitamin as a factor in the early stages is of importance.

According to Leroux-Robert and Costiniu the signature and characteristics of atrophic rhinitis are atrophy, crusts and foetor. The essayist asks if comparatively speaking it would not be as well to say that general paralysis or locomotor-ataxia is the signature of syphilis and neglect of chancre.

The analysis of the one hundred forty-one cases by the essayist is as follows:

1. That in at least 78% the affection begins before puberty, and in at least 42% during the first seven years of life. These are the years during which the face, nose and its accessory cavities are normally developing most quickly. This development is consequently retarded. When the disease begins in adult life, as it rarely does, the typical facies of atrophic rhinitis does not occur.
2. The disease begins as inflammation of the nasal mucosa and in at least half the cases, probably over 60%, there is sinusitis. This tends to keep the inflammation alive and is often missed. The ethmoid is more often affected than is realized. This also applies to the adenoids. The present custom of dealing with adenoids early has reduced the incidence of atrophic rhinitis.
3. Another factor is deficiency in vitamins, especially vitamin A. This deficiency impairs defense

against infection and lowers endocrine function. It may also impair nervous function.

4. The mucosa reacts first by hyperplasia; later, owing to fibrosis, there is glandular atrophy and change from columnar epithelium to stratified epithelium; but if the sinusitis is conquered early enough by proper surgical and other measures there may be considerable recovery with disappearance of crusts and foetor.

5. The bone of the thin lamellae of the turbinates and the ethmoid cells reacts by atrophy, that of the walls of the accessory cavities by sclerotic thickening. Similar sclerosis is found in the mastoid process of children with chronic suppuration of the middle ear. The paranasal sinuses may fail to reach their full development with consequent facial modification.

Dr. Adam also gives his treatment and the results obtained.

### ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.  
717 North Robinson Street, Oklahoma City.

Fractures of the Neck of the Femur, Recent and Old:  
A Report of 631 Cases. Melvin S. Henderson.  
Southern Med. J., XXVII, 1032, 1934.

The pathology, diagnosis, reduction, retention, and restoration of these fractures are discussed and a review of 631 cases is reported. Four hundred ten patients with old fractures were dismissed without any surgical measures having been advised for various reasons. There remained 221 patients for whom treatment was advised. Forty-five of these did not accept the advice, and therefore there were 176 patients who were given treatment.

Fifty-one fresh fractures were treated by manipulation, twelve manipulations were done on late fractures, and 113 open operations were done. There were six deaths—3.4 per cent of this group. The mortality in all cases seen, whether treated or untreated, was 14.6 per cent.

Of the fifty-one cases of fresh fracture treated by closed methods, thirty-six were available for the study of end results. Of these thirty-six cases, excellent bony union was obtained in 66.6 per cent. These cases were treated by Whitman's abduction method.

Of the thirty-six cases in which bone graft operations were performed, excellent results were obtained in 69.8 per cent. The author's technique of bone grafting is described. Beef-bone pegs or screws were used in nineteen cases. In thirteen of these cases, or 81 per cent, the results were excellent.

The Whitman reconstruction operation was used in twenty-three cases. The end results are known in nineteen cases; excellent, 31.5 per cent; good, 36.8 per cent; failures, 31.5 per cent.

Brackett's operation performed in five cases, gave satisfactory results in all. In five cases of fresh fracture, the Smith-Petersen nail was used, with resulting bony union in all.

Habitual Dislocation of the Shoulder Joint. A New Method of Operative Treatment. V. G. Weinstein.  
Soviet Surg., VI, 447, 1934.

The author directs attention to the structure and reinforcement of the anterior aspect of the capsule of the shoulder joint. Basing his studies on previous

anatomical investigations in human and simian cadavera, he points to the importance of the glenoid ligament which reinforces obliquely the anterior portion of the capsule. In human shoulders this ligament is absent in about 16 per cent of cases. In all cadavera in which this ligament is absent, a dislocation of the humeral head is easily produced. The author believes that the habitual dislocation is due either to the absence of this ligament or to a congenital weakness in it. His operation, therefore, is based on the recreation of this ligament.

An approach is made through the sulcus between the deltoid and the pectoralis muscles. The tendon of the long portion of the biceps is reached just above the insertion of the tendon of the pectoralis major into the humerus. The tendon of the long biceps is cut at this level and the distal end is sutured to the tendon of the pectoralis major and the periosteum. A small incision of the capsule is then made slightly above the sulcus intertubercularis humeri and the proximal portion of the cut biceps tendon is pulled out through the incision. The humerus is then rotated externally and another incision is made in the capsule just below the insertion of the subscapularis. The tendon of the long biceps is pulled through this incision, so that it remains within the capsule, and the cut end of the biceps tendon is attached under a periosteal bridge below the lesser tuberosity. The incision over the sulcus intertubercularis humeri is closed and an ordinary dressing is applied. All motions are allowed in four to five weeks.

This operation has been performed on nine patients, all of whom have returned to their normal occupations, which in a few instances consist of heavy physical work.

### SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
LeRoy Long Clinic  
714 Medical Arts Bldg., Oklahoma City.

The Present-Day Trend in the Treatment of Fibroids of the Uterus. By Joseph L. Baer, M.D., Ralph A. Reis, M.D., and Edwin J. DeCosta, M.D., Chicago, Ill. American Journal of Obstetrics and Gynecology, December, 1934, pg. 842.

This is a report on the case records of 1001 patients treated for fibroids of the uterus during the past eleven years at the Michael Reese Hospital. These patients were treated by various members of the staff and there was wide latitude of choice in the handling of all the patients. This fact allows for observation of the trends which have manifested themselves in the fields of therapy.

Standard treatment for fibroids was surgical removal until the advent of radium. The enthusiasm with which radium was employed lasted only until they came to the conclusion that a panacea had not been found. "Surgical removal began to displace radium gradually but definitely."

In the analysis of the case records data were obtained bearing upon interesting problems in the story of fibroids.

Etiology: Other recent publications have aimed to prove that fibroids arise from the effect of ovarian hormonal dysfunction, the result of long-standing pelvic inflammation. The authors give the figures on the incidence of ovarian pathology and salpingitis in their series. They conclude: "Fibroids are conceded to be an abnormal growth of hitherto normal myometrium.



However, the thesis that this growth results from (a) a long-standing inflammatory disease producing (b) follicle cyst formation which in turn by a hyperestrinism results in (c) hyperplasia of the endometrium and (d) fibroid production, is not borne out by the infrequency with which these types of associated pathology were found in this series."

**Pathology:** In the field of pathology this report is interesting because of the extreme small number of associated malignancies. In only five was the diagnosis of sarcoma occurring in a fibroid made, and of these only four were positive and one probable. There was no instance of carcinoma of the cervix. There were four carcinomas of the body of the uterus and no malignancy of the ovaries and tubes was found. (This indicates, naturally, that these patients were carefully studied before operation and excellent judgment used in preoperative diagnosis. This fact must be considered in evaluating the statistics.) The authors then quote the incidence of sarcoma in fibroids as reported in the literature. They range from .8% to 2.8%. They quote Ewing as having seen only five sarcomas developing in fibroids of the uterus in 20 years' experience.

In their series the frequency of ovarian pathology in association with fibroids was found to be 42.4% while the frequency of tubal pathology was found to be 13.3%.

**Sterility and Fertility:** They discuss the relation between fibroids and sterility. "It would seem from a study of the adnexal pathology in this series that the explanation of a large part of the sterility may be found in the coexisting tubal disease rather than in the presence of fibroids."

**Menstrual Behavior:** In consideration of the statement that women who will subsequently develop fibroids are prone to menstruate early, analysis of this series produces the following comment: "It would seem to indicate that the individual in whom there is a tendency toward the development of fibroids does not have a precocious onset of menstruation."

In relation to the statement that the presence of fibroids causes a prolongation of menstrual activity, they do not find sufficient deviation from the normal to bear out this statement.

They analyze their statistics to apply to the two opposing statements made regarding the span of menstrual activity—"the one that women who have an early menarche have a late menopause and the other that the span is fairly constant, averaging from thirty to thirty-five years." "Apparently the span is fairly constant; those who have a late menarche tend to have a late menopause."

**Symptoms:** They have presented interesting and complete tables, but there is little of especial interest in the review of symptomatology.

**Treatment:** "The various procedures employed in the 1,001 patients during the eleven years covered by this study consisted of: supravaginal hysterectomy 663 times, myomectomy 122 times, vaginal hysterectomy 79 times, radium 73 times, total hysterectomy 49 times, and vaginal myomectomy 15 times. Table XI indicates strikingly the steadily increasing favor accorded to vaginal hysterectomy. Total hysterectomy remained about stationary in frequency until the last year during which almost as many such operations were performed as during the preceding ten years. Supravaginal hysterectomy retained its position throughout the series as the operation most frequently chosen."

There then follows a review of their attitude concerning the indications for vaginal hysterectomy, my-

omectomy and total abdominal hysterectomy. They also discuss extensively the position of radiation in the treatment of fibroid tumors. "In general the statement may be made for the gynecologic department of Michael Reese Hospital that radium in the treatment of fibroids is no longer a primary choice in patients in whom the usual contra-indications are not found, rather, its selection is limited to those patients in whom any type of operative removal is contra-indicated. If radium is ill-adapted to these latter patients, then roentgen ray therapy is utilized. It should be borne in mind that this attitude has reference only to patients with fibroids and not to those who have a simple fibrosis uteri."

The following is the summary and conclusions:

"The case records of 1,001 patients treated for fibroids of the uterus during the past eleven years at the Michael Reese Hospital are analyzed.

"No evidence was found to justify the conclusion that fibroids result from ovarian pathology.

"Absolute sterility in this series was apparently due to tubal pathology and not to the presence of fibroids or ovarian pathology. Of the 1,001 patients 73.5 per cent had one or more children; 80.4 per cent either had offspring or had aborted, leaving an absolute sterility of only 19.6 per cent.

"Pelvic malignancy was found in 0.9 per cent, there being 5 sarcomas in fibroids and 4 carcinomas of the corpus uteri.

"The frequency of total hysterectomy shows an increase from 1.4 per cent in 1923 to 14.6 per cent in 1933. Vaginal hysterectomy shows a steady increase from 5.5 per cent to 18.1 per cent. Supravaginal hysterectomy remains the most frequently used treatment for fibroids, 56.2 per cent in 1923 as compared with 57.6 per cent in 1933. Myomectomy has its own group of indications. In the younger age group where there are one or more children, it is being supplanted by supravaginal hysterectomy, 21.9 per cent in 1923, 7.6 per cent in 1933.

"The selection of radium as the treatment for fibroids has steadily diminished because of the increasingly long list of direct contra-indications, the undesirability of a precipitate menopause, the inability to examine the pelvis and abdominal viscera and an appreciable percentage of failures, 11.1 per cent. Radium was used in 15.0 per cent of cases in 1923 and 2.1 per cent in 1933.

"Partial or complete removal of the adnexa was performed in 47.1 per cent of the patients. Indications for these operations on the adnexa included not only pathology, but mechanical reasons and prophylaxis.

"The total mortality in this series was 0.7 per cent (7 deaths). In the last group of 484 consecutive patients there was one death (0.21 per cent)."

**Comment:** The subject matter of this article is extremely valuable because of the frequency of fibroid tumors and because of the necessity for their judicious treatment. These authors have presented interesting statistics and observations concerning etiology, pathology, sterility and menstrual behavior. However, probably the most important feature of this paper is the statistical study of the various methods of treatment, demonstrating the trends of various means of therapy in their hospital. These trends are identical with those in other good gynecological clinics in America with the exception of two features: (1) Vaginal hysterectomy is probably employed in a slightly larger group in Michael Reese Hospital than in most places where the principal indication for op-

eration is fibroids. However, it must be added that with the proper choice of patients and with the proper performance of the operation vaginal hysterectomy has a limited but distinct field of application. (2) The increased use of total hysterectomy instead of supracervical hysterectomy is not common in America. In spite of the forceful feelings of the advocates of total as against sub-total hysterectomy, there has been a decided trend towards more careful pre-operative investigation of the cervix and a reduced incidence of employment of the total operation.

—Wendell Long.

Rizzatti, E., Pennacchiotti, M., and Andreoli, C.: First Results of Partial Thyroidectomy in Advanced Dysthymia With Tendency to Chronicity. *Gior. R. Accad. di med. di Torino*, 97:78 (January-March) 1934.

The authors are under the impression that they were the first to perform a thyroidectomy in advanced phases of dysthymia for distinct purposes. Some attempts, without method and for rather ill-defined purposes, it is true, were made by Davideneff (David-off), Goldner and others.

The authors report in this article 10 cases where this operation was performed. All of the patients suffered from periodic psychoses and the dysthymia was in an advanced phase over a period of years (from 2 to 20).

The technique was that of Andreoli, requiring: Paravertebral anesthesia on the side on which the operation is to be performed (taking care to select the most developed thyroid lobe) by injecting slowly 25 cc. of a 1% solution of tutocain or of percain. After about 15 minutes a transverse incision is made on the neck, the length of it usually not exceeding 4 cm., on a level with the thyroid lobe. The overlying muscles are incised and the sternocleidomastoid muscle is displaced conveniently for the exposure of the thyroid lobe. After careful isolation of the thyroid and after ligation of the thyroid arteries the lobe is resected.

The authors will not describe the results which they observed in each case but treat all 10 cases as a whole. The results were followed up as long as 24 months, only Case 8 being operated upon several months prior to publication of this article. Cases 1, 2, 4, 5 were benefited greatly and the maniacal state showed evident signs of mitigation, so that the patients were no longer confined to single cells and could be allowed freedom. That applied also to the case of the only man in whom the dysthymia had been persistent for 20 years. In three other cases the improvement was even greater (Cases 6, 7, 10) and the patients could be discharged although they were kept under strict supervision. The results were null in three cases. In one case the ill-result was probably due to an incomplete resection. The man suffered from Basedow's disease.

The authors believe that final judgment on the results should be withheld for about five years.

The histologic examination showed as a rule some structural modifications consisting in marked reduction of the follicles, quantitative reduction of the colloid substance, richness of vascularization and greater development, higher up, of the follicular epithelium which assumed a cylindrical form.

The follicles were sometimes so small as to suggest a compact structure in fetal thyroids. In one case the follicular alteration was more marked and instead of the follicles were found epithelial cords and

tubules. In this case, however, the whole suggested alterations of adenomatous type.

In most all cases the noble epithelial elements of the gland showed a marked development without affecting in the main the normal structural plan. The greater development of the epithelial surface of secretion, defined by the smallness of the follicles and their increase in number, and the greater fluidity of the colloid may be interpreted as signs of an increased glandular function.

It was quite interesting to note that the anatomopathologic data coincided with the clinical findings which means that the improvements resulted in those cases in which the thyroid gland was in a state of hyperfunction, while the results of the thyroidectomy were negative in the two cases in which the thyroid was normal.

While the authors do not wish to over-emphasize the importance of thyroid hyperfunction in dysthymia, it seems certain that an increased activity represents one of the most important hormonal facts in the pathogenesis of this class of psychoses.

Rizzatti, E., Andreoli, C., and Pennacchiotti, M.: Partial Thyroidectomy in Advanced Stages of Dysthymia. *Schizofrenia*, Cuneo, 3:433 (August), 1934.

The authors communicated the results of their first experiments of thyroidectomy to the Academy of Medicine in Turin on April 2, 1934. The authors regret that they could not obtain the report of David-off or of Goldner in the original. These two authors performed this operation but did not limit it, as did the authors, to a single class of patients.

The operative technic was not changed (Andreoli's method). In the meantime the authors (including Andreoli) performed an additional number of operations and found the results very encouraging. The results were arranged in table form in order to save space and give a better comparative survey.

The histologic examinations (the pieces were obtained from as many different parts of the thyroid as possible in order to obtain a nearly complete ensemble) showed in the main considerable differences according to age, as expected. The patients below 20 presented normal thyroids in 50 per cent of the cases. The other 50 per cent showed a microfollicular structure. The thyroid was of the so-called normal type in 835 in the ages between 25 and 60. Past the age of 70 the structure was of the compact acolloid type. Dogliotti interpreted the presence of small follicles and the scarcity of colloid in advanced ages as hyperfunction of the thyroid gland, a fact which is of importance for comparative studies. Of course, the authors did take into consideration the possibility that some of the modifications might be attributed to goiter which is endemic in the province of Cuneo.

The comparative study of the histologic findings showed that there existed a great variety of modifications of the thyroideal structure. Some of the glands approached the normal type in almost every respect except for the presence of small follicles or of a very thin colloid when the follicles were of medium size. In general it must be assumed with Benazzi and Dogliotti that an increased vascularization of the gland, hyperthrophy of the epithelium, diminution of the lumen of the follicles and thin colloid are signs of hyperfunction.

The authors do not believe that comparisons could be made between the structure of the thyroid glands of their patients with the general structure of the



thyroid in cases of endemic goiter which are enlarged, of the parenchymatous type, but otherwise presenting no signs of hyperfunction.

**Comment:** This month (June, 1935) I am presenting a paper at the Salt Lake City meeting of the American Association for the Study of Goiter, which deals with hyperthyroidism and psychosis. A frank or true and long-standing or established psychosis associated with hyperthyroidism must be comparatively rare. I am not speaking of the ordinary so-called "thyroid psychosis" which I am in the habit of calling a toxic psychosis. Even toxic psychosis is comparatively rare, but it is not, in my experience, as unusual as a long-standing, established form of psychosis associated with hyperthyroidism. I have had three patients with maniac depressive psychosis associated with hyperthyroidism. These patients were classified as such by Dr. Brake at the State Hospital for the Insane at Norman. In a rather exhaustive search of the literature for the past five years the above papers were the only ones that I could find dealing with this subject of maniac depressive psychosis associated with hyperthyroidism. The original articles were written in Italian and the translation was made by the consulting bureau service of the W. S. Prior Company.

These authors apparently selected their cases for partial thyroidectomy without regard to the presence of hyperthyroidism or even of goiter. With this fact in mind it is of great interest that they should have gotten a good percentage of favorable results in their attempt to cure or alleviate maniac depressive psychosis by thyroidectomy.

In handling my own cases I have carefully discarded psychotic patients who did not have demonstrable hyperthyroidism. I have operated only on those psychotic cases who had accompanying hyperthyroidism which could be demonstrated without any reasonable doubt. I do not recommend operation for maniac depressive psychosis patients who do not have demonstrable hyperthyroidism. It has been my considered opinion that hyperthyroidism could very well be one of the numerous exciting or precipitating causes of this form of psychosis. My patients have shown immediate satisfactory physical improvement following thyroidectomy and, once the hyperthyroidism had been removed by the operation, they have begun a slow but steady and progressive mental improvement which usually requires several years before they could be called mental cures. During this time they have been under the care of Dr. Brake. The slowness with which the mental improvement occurs following thyroidectomy in these patients is one way in which this form of psychosis differs from that of so-called "thyroid psychosis" or toxic psychosis of hyperthyroidism. In the latter, physical and mental improvement are usually coincidental and occur quickly following control of hyperthyroidism by the administration of iodine or by operation.

My patients have been carefully observed for over five years by competent mental experts and have been called mental cures and at the present time are living healthy, useful, satisfactory lives. For this reason I believe that one should not hesitate to operate on a patient who has maniac depressive psychosis with extreme exaltation, and even though he be an apparently mad operative risk, once the hyperthyroidism has been permanently removed, these people start a slow but certain mental improvement which apparently results in a permanent mental cure.

—LeRoy Downing Long.

## BOOKS RECEIVED

**APPLIED ANATOMY**, The Construction of the Human Body Considered in Relation to Its Functions, Diseases and Injuries. By Gwilym G. Davis, M.D., late Professor of Orthopedic Surgery and Associate Professor of Applied Anatomy in the University of Pennsylvania. Ninth Edition, Reset, Reillustrated and Completely Revised by George P. Muller, M.D., Professor of Clinical Surgery, Graduate School of Medicine, University of Pennsylvania; Surgeon to the Misericordia and Lankenau Hospitals, Assisted by Bernard J. Alpers, M.D., Assistant Professor of Neurology, Graduate School of Medicine; Neurologist to the Philadelphia General and Pennsylvania Hospitals; Stirling W. Moorhead, M.D., Assistant Professor of Urology, University of Pennsylvania; Urologist to the Methodist Episcopal Hospital; I. S. Ravdin, M.D., Professor of Surgical Research, University of Pennsylvania; Surgeon to the University Hospital; Robert A. Kimbrough, Jr., M.D., Associate in Obstetrics and Gynecology, University of Pennsylvania; Assistant Gynecologist, University Hospital; Obstetrician, Pennsylvania Hospital; S. Dana Weeder, M.D., Surgeon to the Germantown Hospital; Assistant Surgeon to the Chestnut Hill Hospital. With Six Hundred and Seventy-four Illustrations, Mostly From Original Dissections and Many in Color by Erwin F. Faber. J. B. Lippincott Co., Philadelphia.

This new edition brings this very accurate work up to date and makes it the most useful of its kind to the practicing physician and surgeon.

**GYNECOLOGY**, by Brooke M. Anspach, M.D., Professor of Gynecology, Jefferson Medical College. Fifth Edition, Reillustrated, Reset, and completely Revised by the Author, with the assistance of Philip F. Williams, M.D., Assistant Professor of Obstetrics, School of Medicine, University of Pennsylvania, and Lewis C. Scheffey, M.D., Assistant Professor of Gynecology, Jefferson Medical College. 679 Illustrations of which 10 are in colors. J. B. Lippincott Company, Philadelphia.

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We have in this text everything one can possibly expect in a one volume work on this subject.

**DISEASES OF THE SKIN**, by Richard L. Sutton, M.D., Sc.D., LL.D., F.R.S. (EDIN.) Professor of Dermatology, University of Kansas, School of Medicine, and Richard L. Sutton, Jr., A.M., M.D., L.R.C.P. (EDIN.), Assistant in Dermatology, University of Kansas, School of Medicine. With 1,310 illustrations and 11 colored plates. Ninth Edition, Revised and enlarged. C. V. Mosby Company, St. Louis.

Complete in every detail as to diagnosis and treatment, profuse illustrations but in black and white and colored plates, these adding materially to the value of the work for diagnostic purposes will make this text appreciated very much by the student, general practitioner and specialist.

**METHODS OF TREATMENT**, by Logan Clendenen, M.D., Clinical Professor of Medicine, Medical Department of University of Kansas; Attending Physician, Kansas City General Hospital; Physician to St. Luke's Hospital, Kansas City, Mo. With Chapters on Special Subjects by H. C. Anderson, M.D.; Ursulla Brunner, R.M.; J. B. Cowherd, M.D.; Paul Gempel, M.D.; H. P. Kuhn, M.D.; Carl O. Rickter, M.G.; F. C. Neff, M.D.; E. H. Skinner, M.D.; E. R. DeWeese, M.D.; and O. R. Withers, M.D. Fifth Edition. Price \$10.00. C. V. Mosby Company, St. Louis.

In this work we find in one volume much information collected from many sources, making it a very ready as well as complete reference. Not only is the accepted method of treatment recommended by the technic described in detail, the arrangement is unique and facilitates the study of any particular subject.

**USEFUL DRUGS:** A list of drugs selected to supply the demand for a less extensive materia medica with a brief discussion of their actions, uses and dosage. Edited by Robert A. Hatcher, Ph.M., Sc.D., M.D., and Cary Eggleston, M.D. Prepared under the direction and supervision of the Council on Pharmacy and Chemistry of the American Medical Association. Ninth edition. Cloth. Price 60 cents. 203 pages. Chicago, American Medical Association, 1934.

This little book prepared by the A. M. A., seems to be very appropriate at this time, as so many doctors are now prescribing proprietaries. After careful perusal this book will bring to the attention of the young physician these very useful drugs and the older physician who years ago developed the ability to write a good prescription will no doubt recall his interest in this very important phase of prescribing. For this reason it is recommended to the medical profession of this state and you will best be impressed with its value by giving it careful consideration.

#### SPONTANEOUS HEALING OF RENAL TUBERCULOSIS

Edward L. Keyes, New York (Journal A. M. A., April 20, 1935), points out that Medlar has shown that renal tuberculosis begins as a nonsurgical lesion that frequently heals and states that this lesion may be identified clinically as a tuberculous bacilluria (as defined in the text). Surgical renal tuberculosis, characterized by gross changes shown by pyelography, is clinically a progressive disease with a fatal termination unless interrupted by nephrectomy. The pyelogram discloses surgical tuberculosis. The earlier the nephrectomy, the greater the probability of cure. The healing of surgical renal tuberculosis by pathologic nephrectomy is extremely rare and, even with the kidney function gone, active tuberculosis may persist. The pathologist will continue to accept cases like the one the author reports, in which the patient died of pyonephrosis, renal insufficiency and gangrene of the bladder due primarily to renal (and prostatic) tuberculosis (yet the pyonephrotic kidney showed only scattered, calcified, healed lesions of tuberculosis) as evidence of healed partial surgical tuberculosis of the kidney. To the urologist such cases have no interest, for though surgical renal tuberculosis may remain latent for long periods of time, latency is extremely rare and even in its most complete form, i. e., latency due to complete physiologic destruction of the kidney, the tuberculosis may still actually be active. The curative treatment of renal tuberculosis—old and new—is nephrectomy.

#### MEDICAL TREATMENT OF CHRONIC ARTHRITIS

Russell L. Cecil, New York (Journal A. M. A., Nov. 24, 1934), summarizes his point of view on the treatment of chronic arthritis. Many physicians believe that rheumatoid arthritis is a chronic infection; his belief is that it is a chronic streptococcal infection. But just what the underlying factors are that lead to its development, and just what factors determine recovery or progressive decline into the ankylosed state, no one pretends to know. The treatment of chronic arthritis differs materially for the different types of the disease. Hypertrophic arthritis, being a degenerative process, is best relieved by the elimination of all trauma to the affected joints and by the application of such measures as will stimulate the local circulation. Rheumatoid arthritis appears to be a chronic infection and should be treated as such. Unfortunately there is no standard therapy for rheumatoid arthritis at the present time, but there are certain measures such as rest, elimination of focal infections, physical therapy and regulation of diet, that have wide acceptance. Climatic therapy and vaccine therapy are also well thought of in many clinics. The author sums up his method of treating rheumatoid arthritis in one word, "rehabilitation". This begins with rest and elimination of all foci of infection. Patients that show evidence of streptococcal infection receive streptococcus vaccine, usually by the intravenous method. In addition to these measures, a carefully regulated diet, reinforced by vitamins, adequate elimination through the intestine, bladder and skin, and carefully supervised physical therapy are looked on as valuable adjuncts in the treatment. Iron and arsenic are the most valuable drugs for building up the patient, and salicylates are in high favor for relieving pain and discomfort.

#### INTESTINAL TUBERCULOSIS: PATHOLOGIC AND ROENTGENOLOGIC OBSERVATIONS

Russell S. Boles and Jacob Gershon-Cohen, Philadelphia (Journal A. M. A., Dec. 15, 1934), analyzed 1,000 consecutive necropsies at the Philadelphia General Hospital to show the incidence of intestinal tuberculosis and its relation to pulmonary tuberculosis. Ulcerative intestinal tuberculosis was shown to have its highest incidence in cases of fibro-ulcerative cavernous pulmonary tuberculosis. It was so confined to this group that one might suspect that there is no intestinal ulceration without pulmonary ulceration. It was shown to occur in cases of early or exudative pulmonary tuberculosis, in which, however, it had its lowest incidence (18 per cent). It occurred more frequently in women of the Negro race between 20 and 40 years of age. Primary hyperplastic tuberculosis or tuberculoma of the intestine was not observed in any case. Such non-tuberculous intestinal lesions as carcinoma, peptic ulcer, appendicitis and diverticulitis, all with and without perforation, were associated with pulmonary tuberculosis. Cardiovascular-renal disease, chronic cholecystitis, cholelithiasis and cirrhosis of the liver were commonly noted diseases associated with pulmonary tuberculosis with and without intestinal ulceration. In view of the uncertainty of the symptoms and physical signs of intestinal tuberculosis, the authors believe that a strong inferential diagnosis of the disease can be made when one considers it in its relation to the various types of pulmonary tuberculosis and as a result of evidence secured by the double contrast barium enema.



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### The Present Status of Radiation Therapy\*

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Since the discovery of x-ray by Roentgen in 1895 and radium in 1898 by Madame Curie, one or both of these agents has become an almost indispensable therapeutic, as well as diagnostic aid to every department of medicine. Let us take a brief retrospective view of the slow but certain progress of radiology during the past forty years.

Soon after the discovery of this electropotentiality, accidental skin reactions of varying degrees began to occur upon the hands and faces of the frequently exposed operators in various laboratories throughout the world. These radiation accidents were unfortunate though served to stimulate experimental treatment of many hitherto intractable diseases such as chronic eczema, psoriasis, ringworm, birthmarks and cancer. In the meantime, many individual laboratories had begun to study in a limited way the histological effects of radiation upon both normal and pathologic structures, though not until ten or twelve years later were the real fundamental laws of radiation therapy announced by Bergonie and Triboudeau. They alleged, after a careful study, that each variety of cells responded differently to x-ray and radium; that immature cells which were undergoing more rapid growth (mitosis) were more radiosensitive than adult cells or those which are at mitotic rest.

The original work of these men foretold

a new day for rational radiation therapy, and was subsequently verified with additional elaborations by Heineke, Regaud, Warthin and Schwartz, and soon became universally recognized as the foundation of all x-ray and radium therapy.

Christie<sup>1</sup> has recently tersely expressed this law as follows: "The sensitivity peculiar to each kind of cell appears to be related to its life cycle; that is, the shorter the life cycle the more sensitive to radiation, and vice versa. Lymphocytes have the shortest life cycle of all cells; hence, are the most sensitive to radiation. Bone and nerve cells have the longest life cycle, therefore, are the most resistant.

Regaud after a large experience made a further fundamental observation, viz: that previously radiated tissue or poorly nourished ischemic tissue, and tissue which has been affected by inflammatory or microbic invasion becomes more radioresistant than in its normal status.

The step between the most highly radiosensitive and the most radioresistant tissue amounts to a considerable degree in x-ray or radium technic, though it is well known by radiologists that no living tissue is wholly unaffected or invulnerable to certain wave lengths, whether from x-ray or radium; therefore, let us remember that the pathologic appellation of radiosensitive or radioresistant is only a relative one and implies that such tissue requires less or more roentgen (R) units to cause an equal degenerative cellular change. It is noted that degenerative cell-

\*Read before the Section on Surgery, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, May, 1934.



ular changes begin first with fragmentation and scattering of their nuclear chromatin and cytoplasm which is followed by digestion by the phagocytes of the injured sensitive lymphocytes. This process extends outward to adjacent structures until the whole of the endothelial lining of the vascular supply of the entire exposed area has been materially altered.

For many years an idea has prevailed that under certain conditions of technic very small doses of x-ray or radium might stimulate pathologic tissue growth. This was the early day Arendt-Schultz law which has since failed to be verified by other radiologists without certain reservations. It is, however, a demonstrable fact that cellular metabolism of both animal and plant life is at first accelerated by small doses of radiation, though such acceleration is only a transitory phase which is later followed by a more or less pronounced degenerative or inhibitory action. This process varies according to the intensity of the radiation given.

Our present knowledge of the radio-sensitivity of various tissues of the human body has recently been classified in order of their reaction by Desjardins as follows: (This table will serve as a convenient guide in the treatment of all types of neoplasms):

#### DESJARDIN'S<sup>2</sup> CLASSIFICATION

1. Lymphoid cells—including polymorphonuclear and eosinophilic leucocytes.
2. Epithelial cells enumerated in the order of their sensitivity:
  - a—Basal of the secretory glands, including the salivary.
  - b—Basal of the Spermatogonial type, the testes, the follicles of the ovary.
  - c—Basal of the skin to mucous membranes.
  - d—Alveolar process of lungs, bile duct, etc.
  - e—Epithelium of the kidneys.
3. Endothelial cells of the blood vessels, pleura and peritoneum.
4. Connective tissue cells.

5. Muscle cells.

6. Bone and nerve cells.

\* \* \*

Cellular response to radiation is further dependent upon wave length which is illustrated by the following familiar example: An unscreened x-ray exposure over one square inch of skin surface with the machine gauged for an output of eighty kilovolts of long wave x-ray for a certain number of units beyond skin tolerance will within ten or fifteen days produce a marked reaction, and perhaps be followed by a painful necrosis; whereas, an exposure of the same sized area with the same machine which has been stepped up to 200 kilovolts, which is within the realm of short wave lengths, such as is commonly used in treatment of deep or gross cancer lesions, will produce only a dense, brawny, red induration with pigmentation and tissue adhesion to the underlying muscles without necrosis.

The histological and biochemical action of x-ray and radium is essentially the same, though the wave length of unscreened radium is approximately one-twentieth that of the wave length emitted from the ordinary unscreened x-ray tube. Within recent years through the cooperative efforts of the scientific physician, with that of the expert manufacturing electrical engineer, x-ray machines are now being manufactured which give an output of so large a kilovoltage as to more nearly approach the short wave length and penetrability of the short wave Gamma ray of radium; therefore, the selection of either x-ray or radium for an attack upon a malignant neoplasm has now become largely a matter of choosing the one most convenient or accessible for treatment of the growth, though many eminent pathologists, including Ewing, still allege that in the field of cancer, radium is more selective of pathologic tissue than x-ray.

The dermatologist of today who is not equipped with both x-ray and radium is not far removed from the primitive family physician who had nothing to give but pills compounded and rolled by his own unsterile fingers. The curative or beneficial effects of radiation therapy in such diseases as acne, eczema, lichen planus,

furunculosis, pruritus ani, tineas, mycosis fungoides, sarcoids, keloids, vascular nevi, angiomas, lymphadenitis and enlarged thymus glands is so well known as to need but to mention, though it is not generally known that x-ray therapy of a certain technic in the treatment of early erysipelas is, in many cases, equally as spectacular.

The abortive action of x-ray upon early furunculosis has long been known and still successfully practiced in the office of the radiologist. The favorable response of unsightly and sometimes distressing angiomas or cavernous nevi under carefully screened radium, at intervals over long periods of time, has turned the heavy heart of many an anxious mother into inexpressible joy.

O'Brien<sup>3</sup> (Boston City Hospital) has recently reported a series of thirty cases of syringomyelia treated by deep radiation with results unequalled by any other therapy. The primary object of this discussion, however, is the treatment of cancer by radiation.

The treatment of cancer of the skin, lips and oral cavity was for many years under clinical observation and sometimes sharp critical discussion between surgeons and radiologists, though during the past ten or twelve years malignancy of these areas has become almost the exclusive labor of the radiologist who also utilizes the endotherm knife and cautery.

Since the improvement in screening, high voltage short wave and other factors of technic, cancer of the vagina and of the cervix has also been almost completely removed from the field of scalpel surgery, and placed into the realms of x-ray and radium therapy, together with the frequent need of the endotherm knife and cautery. Quoting from Healey<sup>1</sup> (New York Memorial Cancer Hospital) in a recent address, "Carcinoma of the cervix and carcinoma of the vagina seem to have been almost entirely removed from the domain of surgery and to have become problems for radiation alone."

Surgeons universally for the past fifteen or twenty years have routinely referred most of their cases of postoperative and inoperable or advanced cancer

for radiation therapy because both clinical observation and tabulated statistics from x-ray laboratories with modern radiation therapy equipment operated by qualified radiologists seem to have fully justified this procedure. Indeed, authentic reports of occasional complete recoveries from what had been pronounced inoperable cancer have filtered into medical literature long before the improved so-called Coutard technic of deep x-ray therapy had been introduced into America. Radiation therapy in cancer of the gastrointestinal tract, the prostate gland or bladder, either as a pre- or postoperative procedure, though, like surgery, not often is curative, appears to justify its continuation. Borderline cases have occasionally been prolonged for a period of three to five years.

It is well known that the entire group of lymphoblastomata may be classified as radiosensitive. They respond to radiation therapy in the early stage of the disease with striking rapidity which lasts for a period of several months—sometimes several years.

Not a few cases of five to seven-year cures of Hodgkin's or lymphosarcoma have been reported by conservative radiologists from various clinics. Most experienced surgeons have for many years referred their cases of cancer of the breast for postoperative radiation.

May we suggest that tabulated statistics upon the treatment of cancer of the breast from the larger hospitals and clinics which possess modern x-ray and radium equipment in charge of qualified technicians now clearly indicate an advantage of five to ten per cent in favor of preoperative radiation rather than postoperative radiation.

One of us (Lain) recently heard Douglas Quick give public expression to approximately the following words: "With modern x-ray equipment following the improved so-called Coutard technic and improved interstitial radium radiation, it now seems probable that within the next ten years the treatment of cancer of the breast will be entirely delegated to the radiologist."

*Finally:* All physicians and surgeons



referring patients to radiologists should know that: (1) under the new and more successful technic of radiation therapy of cases of deep, advanced cancer it takes from two to four weeks to complete one series of treatments.

(2) A series of deep, intense radiation is followed in fifteen to twenty days by deep erythema and marked discomfort with sometimes vesication, pigmentation and exfoliation of the skin. This reaction is not a true radiation burn and will subside in two or three weeks, leaving the skin and other structures in excellent condition, with surprising improvement in the malignant process.

*Summary:* Radiation therapy is now the method of first choice in the treatment of cancer of the skin, lips, oral cavity, lymphoblastomata and most cases of cancer of the cervix.

Radiation gives palliation in most hopeless cases of cancer and a few spectacular cures in inoperable cancer.

Pre-operative and postoperative benefits of radiation therapy have long been recognized and is routine practice in most cancer clinics.

There is yet no known panacea for all types or degrees of malignancy; therefore, it is unwise and inconsiderate of the best interests of the patient for any physician or surgeon to attempt to treat all forms of cancer by the same method.

Every physician who assumes the grave responsibility of treating a patient with an unlocalized or progressive cancer should always, if possible, consult with and utilize the services of pathologist, internist, surgeon and radiologist in order that his patient may have the best opportunity for complete recovery.

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## The Diagnosis and Treatment of Some Common Anorectal Diseases\*

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The diagnosis of anorectal disease is simplified by the knowledge of two things:

1. The local anatomy.
2. The lesions most commonly found.

While skillful treatment of the more difficult cases comes only with experience, careful examination may reveal conditions which can be treated by the general practitioner with credit to himself and benefit to his patient. This is much better than overlooking or ignoring your patient's rectal complaints and leaving him to seek relief at questionable sources. You may not hear from a patient again

after indifferently prescribing a suppository, possibly even without an examination. He feels that you have done your best and failed, so aid is sought elsewhere.

#### APPLIED ANATOMY

Embryologically, the rectum develops from the hindgut, and is of entodermal origin. As the hindgut progresses posteriorly, it carries with it its epithelial lining, a true mucous membrane, its sympathetic nerves, and its lymphatics and blood vessels of visceral origin. At the same time the anus, of ectodermal origin, is developing as a depression called the proctodeum. It is therefore lined with a modified skin supplied by spinal sensory nerves and its lymphatics and blood vessels belong to

\*Read before the Surgical Section, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, May, 1935. A motion picture was presented.

the general circulation. Their line of union is called the mucocutaneous or anorectal line. While this line is very irregular, the two types of epithelium are sharply differentiated. The stratified squamous epithelium below this line gives it a dull pink appearance while a single layer of columnal epithelium of the mucous membrane above gives it a red, shiny appearance. While there is free anastomosis between the arteries, veins and lymphatics across this line and possibly some overlapping of the nerve supply, for all practical purposes it may be considered the dividing point between the visceral and somatic systems. It is therefore descriptively referred to as the "watershed." These facts are of greatest importance in diagnosis.

### INTERPRETATION OF SYMPTOMS

The term "anorectal disease" is commonly used for the reason that probably 95 per cent of the pathology with which we have to deal occurs near the anorectal or mucocutaneous line with some involvement above and below. However, the symptoms produced in the two areas are entirely different and this knowledge may be of value in localizing a lesion. For example, while an embolus from below the anorectal line would enter the general circulation, above, it would enter the portal. Some of the questions commonly asked may be answered by referring to the anatomy.

Can a swollen inguinal lymph gland bear any relation to the anorectal symptoms? Infection or malignancy involving the anal skin below the anorectal line may extend to the inguinal lymph nodes, above, to the retrorectal and mesenteric nodes.

A patient may complain of a sharp, cutting pain high up in the rectum. Remembering that only the anal canal is supplied with spinal sensory nerves, the acutely painful lesion will be found to involve this area. We are all familiar with the anal ulcer or fissure in the anal canal which may cause intense, acute pain, and the extent to which ulceration or a carcinoma may involve the rectum before pain is produced, and then only the ache or cramp of the sympathetic nerves.

In a recent article, Thiele<sup>1</sup> has shown the anatomic basis for the production of referred symptoms from anorectal disease, both through the cerebro-spinal and vegetative nervous systems. It is impossible to detail here the anatomy of the nervous system which reveals the basis for the production of a long chain of symptoms arising from anorectal irritation such as backache, pain in the hip or down the legs, headache, genito-urinary spasm, a spastic or atonic colon with its symptoms of shifting abdominal pain and constipation, stomach symptoms and general nervousness and irritability, to mention only a few of the more common.

The anorectal region is an area more easily abused than any other portion of the body. The funnel-like arrangement whereby the larger tube is joined to a smaller at the anorectal line results in an area which is subject to trauma. This area is frequently subjected to chemical irritation by liquid stools from laxatives, often alternating with the hard stools of constipation. The rectum is richly supplied with blood vessels but unfortunately the veins have no valves and this predisposes to stasis in the venous circulation. The blood supply of the anal canal is relatively poor and the nutrition is often further impaired by hypertonic sphincters. This area is therefore predisposed to many conditions which might be classed as due to:

#### I. *Structural weakness.*

1. Prolapse.
  - a. Mucosal.
  - b. Anal skin.
  - c. Rectal.
2. Hemorrhoids.

#### II. *Infections.*

1. Pruritus.
2. Cryptitis.
3. Fissure.
4. Abscess.
5. Fistula.

#### III. *Neoplasms.*

1. Hypertrophic papillae.
2. Polyps.
3. Adenocarcinoma.
4. Carcinoma.

In many of the conditions there is some combination of the above classes. For the



purpose of limiting our discussion, all reference to specific infections such as amoebiasis, tuberculosis, gonorrhoea, etc., are omitted. This classification is used for the reason that I believe the causative factor in much anorectal pathology is an inherent structural weakness which results in prolapse and the formation of hemorrhoids, with secondary infection acquired as the disease progresses. In others, the infection is primary, the tone of the tissues is impaired, and prolapse and varicosities develop.

The lower rectum is subject to acute infections. Those which become chronic tend to localize in the crypts of Morgagni. The investigations of Tucker<sup>2</sup> and Hellwig seem to indicate that this is not due to the crypt as such, but the presence of branching gland-like structures or ducts which extend well into the submucosa and even into the muscular layer. These ducts afford infection easy access to the submucosa after which the virulence of the infection determines its course.

Fortunately, the diagnosis is frequently self-evident. For the average case, a routine examination should be made to insure thoroughness. This includes:

- I. *Inspection.*
- II. *Palpation.*
- III. *Anoscopic examination.*
- IV. *Proctoscopic examination.*

In certain cases we should include Roentgen ray, study, and consultation with the internist.

Inspection tells us much but at the same time may be very misleading. The thickened, excoriated or water-soaked appearing skin of pruritus ani may be observed. While this condition occasionally is due to a fungus infection, it is always an indication for further careful examination which often reveals pathology higher up. Skin tags are evidence that there is or has been infection beneath the anal skin resulting in a loss of tone and sagging which produces the superfluous tag.

Palpation is important. Tightly contracted sphincters usually mean some irritation within the anal canal. Rotating the finger and palpating along the anorectal line may reveal tender points, the anoscopic examination reveals as red, frequently with slight induration, which

tender crypts which bleed with slight probing, a typical cryptitis. Blood stained mucous on the tip of the examining finger usually means serious disease in the rectum since the small amount of trauma produced by the finger will usually not produce bleeding from an internal hemorrhoid or a cryptitis. Extensive ulceration or a carcinoma will usually be found.

I have heard doctors say that a patient had no hemorrhoids because the finger had been inserted and none felt. The use of an anoscope would be very enlightening in many such cases. An internal hemorrhoid can be felt only when it has progressed to the point where there is extensive fibrosis or thrombosis present. The finger may encounter folds suggesting hemorrhoids but the true condition can only be discovered by instrumentation.

The importance of the proctoscopic examination was forcefully impressed upon me several years ago when a friend brought his wife to me to determine the cause of her rectal bleeding. The anoscope revealed large internal hemorrhoids which would bleed freely when rubbed with an applicator. The diagnosis seemed plain and I hesitated in subjecting her to the discomfort of a proctoscopic examination. As a matter of routine, however, the proctoscope was introduced and to my surprise an extensive carcinoma was encountered beyond the reach of the examining finger. Since that time it has been my misfortune to encounter many patients who are very bitter against their family physician because he has ignored their complaints of rectal bleeding, constipation or diarrhoea over a period of time in which a carcinoma has progressed to the inoperable stage.

It is within the reach of every general practitioner and internist to easily acquire the degree of skill necessary for the diagnosis of the large majority of anorectal diseases. How much better this would be for all concerned than to dismiss the subject with that overworked phrase: "That's one thing I know nothing about."

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## Ulcer Serpens\*

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Ulcer Serpens is a deep form of suppurative keratitis caused by a corneal injury plus pneumococcic infection, and characterized by a stormy course with resulting visual defects and at times even the loss of the involved eye.

Undernourishment in the poorer laboring class, especially in alcoholics, predisposes to this condition. The vast majority of those affected are over forty years of age, although children may develop identical or similar ulcers following measles, scarlet-fever or smallpox. Warm weather, with consequent increased exposure to outdoor foreign particles also plays a part.

The chief eye condition leading to ulcer serpens is chronic Dacryo-cystitis with frequent regurgitation of purulent material into the conjunctival sac. Chronic conjunctivitis—including Trachoma, Herpes of the cornea and glaucoma—render the eye more vulnerable.

Pneumococci are frequently found in apparently normal conjunctival sacs, but when an injury to the corneal epithelium and Bowman's membrane occurs in the presence of pneumococci, the development of a corneal ulcer is likely. Often the corneal injury seems trivial. It may be caused by a twig or stick, small stone, finger nail or by trichiasis.

During the first few days after injury the symptoms may not be severe, but by the third or fourth day typical findings begin to develop, and by the end of a week they are pronounced and unmistakable. Often the patient is not seen by the Ophthalmologist until at least a week has elapsed, then he has excruciating pain in the eyeball and surrounding region, due to severe accompanying irido-cyclitis. Photophobia and lacrymation are troublesome and vision is impaired. Objectively one notes swelling of the lids with con-

junctival chemosis, very pronounced conjunctival and ciliary injection, a gray sloughing central lesion of the cornea with an overhanging, advancing edge and yellowish border. The whole cornea appears hazy, iris dull and hypopyon is always present. This is seen best with the patient in upright position. Dense posterior synechia develop early while later anterior synechia are also marked.

The course of the ulcer itself can be accurately gauged by daily staining with two per cent fluorescein or mercurochrome. In fulminating cases it changes even from hour to hour. Typically it progresses in irregular, serpent-like fashion, one side advancing with undermined yellowish edge while the opposite side heals. The base is a gray-yellowish, foul slough which often obscures detection of a deep extension of the ulcer. Much or all of the corneal surface may be involved, while at the same time it burrows deeper. The hypopyon rapidly increases in size and becomes more firm. It may occupy one-half or more of the anterior chamber and remain distinctly visible even while the patient is recumbent. At the same time a posterior abscess erodes Descemet's membrane and the deep corneal stroma. Iridocyclitis with marked anterior and posterior synechia progresses rapidly.

Prognosis is poor, at the best, as to vision, because of the central location of the ulcer with resulting corneal opacities or facets. A dense leucoma of the central area of the cornea, is not unusual. Many cases perforate in spite of excellent but unavoidably delayed treatment. Then the iris usually prolapses and even prolapse of the lens may occur. A persistent fistula or intra-ocular infection with panophthalmitis may lead to phthisis bulbi. The weakening of the corneal structure may lead to keratectasia or staphyloma of the cornea. Secondary glaucoma resulting from anterior and posterior synechia is to

\*Read before the Eye, Ear, Nose and Throat Section of the Oklahoma State Medical Association, Oklahoma City, May 14, 1935.



be feared, and cataract sometimes remains.

PATHOLOGIC ANATOMY (FUCHS)

Fuchs studied the early stages of ulcer serpens by inoculation in glaucomatous eyes condemned to enucleation, and removed three days after inoculation. At the point of inoculation a gray infiltrate was present, being raised up somewhat above the level of the adjoining cornea,

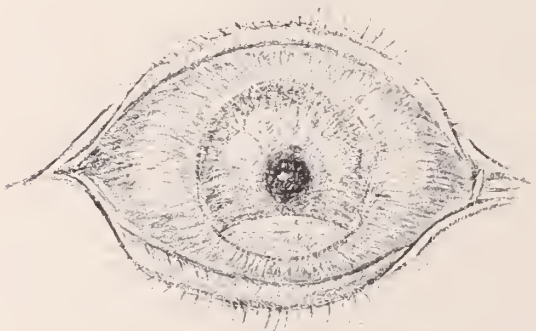


Fig2. HYPOPYON ULCER

and having a more marked gray border, as in beginning ulcer serpens. Cross section showed the plug consisting of swollen superficial layers of the cornea. Therein lay a few pus corpuscles, staining poorly (necrotic) and masses of pneumococci which filled out almost completely the visible large spaces in the plug. Bowman's membrane is likewise necrotic over the plug.

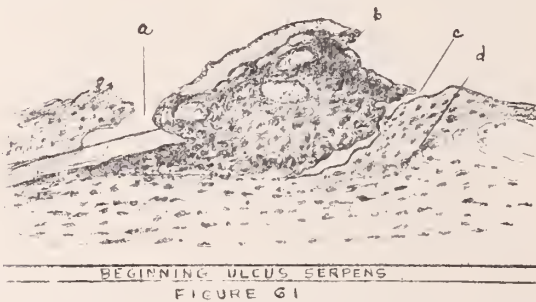


Figure 61: At (a) swollen masses press through a break in the membrane onto the anterior surface of it, while the sharpened margin of the plug shoves itself, wedge-like, beneath the membrane. Bowman's membrane is absent on the other side between (b) and (c). Through this defect the epithelium (d) has grown down into the depth and sharply sets off the necrotic plug from the living tissue of the cornea.

The corneal lamellae on the under side of the plug are permeated by pus corpuscles whose mass increases toward the margin (a). Here all living pneumococci lie in the necrotic margin itself as well as in the surrounding infiltrated lamellae of the cornea. An advance of the suppuration was therefore to be feared toward this side.

The exudate in a. c. arises from the vessels of uvea and therefore frequently contains pigment granules. It consists of pus cells and a fibrin matrix. It first accumulates in the angle between the cornea and iris, at the bottom of the anterior chamber. The upper part is not strictly horizontal but drawn up on the back surface of the cornea and goes into an extremely thin layer of pus cells onto the entire posterior surface of the cornea. This is the cause of the delicate clouding outside the ulcer proper.

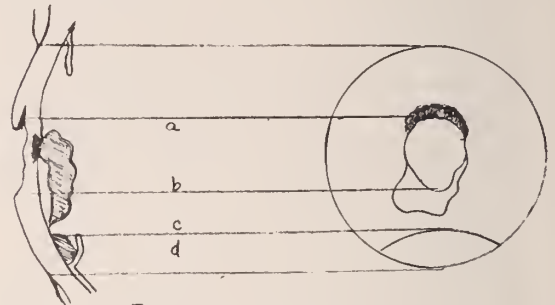


FIG.63. ULCUS SERPENS

Figure 63: Upper progressive border (a) yellow crescent, (b) lower—slightly clouded border, (c) pus clumps behind cornea, (d) hypopyon, (e) posterior abscess.

Older cases show a flat loss of substance reaching into the middle layers of the corneal stroma with steep, somewhat wall-like elevated borders.

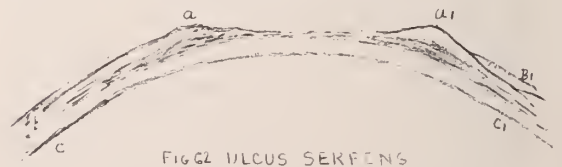
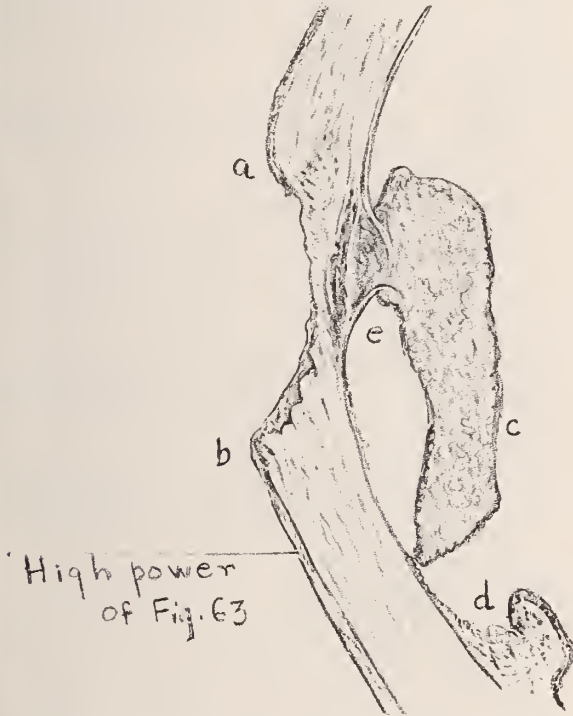


Figure 62: Ulcer is large yet coated with pus throughout and has a yellow border (aa) entirely about it. It is elevated because the underlying infiltration has lifted up the anterior corneal lamellae. The still suppuratively infiltrated layers form

the floor of the ulcer; thereupon follow those lying in the depth, showing no living corneal corpuscles so that the cornea is therefore here necrotic in its entire thickness. Marked infiltration under the limbus (bb) exists at the border of the cornea; thereunder lie living corneal lamellae showing moderate infiltration which only becomes more marked toward the deeper layers (cc). Posterior abscess is absent in this case.



If infiltration disappears in the course of disease regeneration of epithelium sets in at once and this grows over the floor of the loss of substance. However, restoration of the corneal surface may not be perfect, and facet formation is not unusual.

It must be understood that the above picture of ulcer serpens is not always seen clinically. Variations in the virulence of invading organisms and tissue-resistance, as well as previous treatment, may alter the picture considerably. However, progressive foul ulcer with hypopyon is a constant finding. Other organisms than pneumococci may be recovered from the ulcer, but pneumococci always predominate in a typical case.

*Treatment:* As a prophylactic measure

the successful treatment of chronic conjunctivitis and especially of chronic dacryocystitis, is of primary importance. Don't temporize with the lacrymal infection but remove the sac promptly in elderly people when irrigations and possibly probing, fail to yield immediate improvement.

As to the actual treatment of severe ulcer serpens, the ophthalmologist has succeeded if he brings about healing without perforation, whatever the final visual result. Everything possible must be done promptly and radically to avoid disastrous results. Hospitalize the patient and keep him in bed. Provide free elimination, good diet and force fluids. Give sodium salicylate in large doses (at least fifteen grains every three hours). Typhoid-Para-Typhoid vaccine (30,000,000 to 70,000,000 organisms intra-venously as initial dose—and do not hesitate to give much larger dose if temperature reaction of 101-102 degrees is not obtained). Repeat vaccine every other day for several doses if necessary.

Do not fail to look for infected teeth and sinuses; take the blood Wasserman; then treat accordingly. Bad teeth should be immediately removed.

Locally, use atropine drops (one per cent to three per cent) as necessary to keep the pupil dilated and if necessary supplement with atropine and adrenalin packs in cul-de-sac or subconjunctival atropine. Watch the tension carefully while giving atropine and if increased, do immediate paracentesis, but continue atropine. Hot compresses should be used. Optochin (one per cent) should be applied directly or by instillation—daily. A bandage should be used, especially if perforation is imminent.

In early cases the thermophore (145 degrees for one minute) is helpful. A heated muscle hook has a similar effect. But if the ulcer is very severe use trichloracetic acid (crystals) or phenol for cautery. Instill butyn or holocaine drops, curette ulcer gently, dry with cotton applicator, then apply trichloracetic acid or phenol with the end of a tooth-pick or a very tightly wound small cotton applicator. Be sure no excess of acid is present. Shake off excess



before applying. If there is not definite improvement in twenty-four hours, use thermo or galvano cautery. But if chemical cautery improves the ulcer, repeat at one or two-day intervals (for two or three times).

When the ulcer is very extensive with large hypopyon, or if tension is increased, do a paracentesis. This may be repeated several times. (Sometimes there is marked improvement, as may occur following spontaneous perforations.) When the ulcer covers most of the cornea, a Saemisch Section should be done. The wound should be re-opened daily until definite improvement occurs.

#### *Treatment of complications:*

1. Descemetocle—Eserine and pressure bandage.
2. Prolapse of iris—If small, leave alone; if large, usually excise.
3. Fistula—Conjunctival flap.
4. Leucoma—Heat, massage cornea with yellow oxide ointment, dionine, sodium iodide or mercury cyanide subconjunctivally.
5. Staphyloma and phthisis bulbi—Usually enucleation.

The following case histories are those of patients treated for severe corneal ulcer in the eye ward at Bellevue Hospital, between November 1, 1933 and March 1, 1934. At this time the essayist was a member of the house staff, eye service and assisted with such treatment.

#### CASE No. 1: R.C., male, 40.

History: Left eye red and sore for one week, poor vision, aggravated by exposure and intoxication.

Physical examination: Pyorrhea. (Refused extraction.)

Eyes: Vision: (Left eye) counts fingers at one foot. Ulcer of cornea 6-8 o'clock near limbus, cornea hazy, moderate hypopyon. Tension: One plus.

Treatment: Atropine, hot compresses, salicylates, milk (10 c. c.) intramuscularly. Temperature 101.8 degrees, typhoid vaccine—two doses (temperature 98.2 and 101.6 degrees).

Progress: Nine days after admission, sudden perforation; pressure bandage applied. (Ulcer had been treated conservatively, never cauterized).

Discharge note: Vision, left eye—Light perception (projection poor). No corneal stain, but marked irregularity of corneal surface, with leucoma.

#### CASE No. 2: G.D., male, 56.

History: Redness, pain and soreness of left eye

for three weeks. Was treated at clinic but no improvement.

Physical: Several infected teeth (four extracted).

Culture of conjunctival sac: Staphylococcus aureus.

Eyes: Left eye—Vision—Light perception. Projection poor. Extensive ulcer lower central area, marked hypopyon, tension four plus. (Old trachoma both eyes).

Treatment and progress: Saemisch Section. (Wound re-opened next day). Milk, 10 c.c. intramuscularly. (Temperature 99.6 degrees after two doses). Typhoid one minim (temperature 104 degrees); two minims (temperature 103 degrees); three minims (temperature 101 degrees); cauterized—trichloroacetic three times. Phenol, ultraviolet light three times (worse after each). Dionine and hot compresses. (Immediate improvement after phenol).

Discharge note: Vision, left eye—Hand movements at two feet. (Light perception good). Good recovery from severe hypopyon ulcer, but still corneal infiltration.

#### CASE No. 3: L.L., male, 42.

History: For two weeks pain, redness and poor vision of left eye. Drinking heavily.

Physical: Many infected teeth (three extracted).

Conjunctival smear: Pneumococci, diphtheroid and bacillus subtilis.

Left eye: Vision—Light perception. (Projection faulty). Almost entire cornea stains. Ragged, dirty, yellowish ulcer. Marked hypopyon. Tension three plus.

Treatment: Saemisch Section. Much pus escaped. (Wound re-opened twice). Eye patch. Atropine, hot compresses, diphtheria anti-toxin, 5,000 units and 10,000 units, intramuscularly. Typhoid-Paratyphoid vaccine, minims one.

Discharge note: Vision, left eye—Light perception. Projection poor. Tension soft. Cornea thin and slight Keratectasia.

Then the case histories of four other severe corneal ulcers are given. None of these had hypopyon or other definite characteristics of ulcer serpens.

The following is a summary of this series of seven cases:

Average age .....	49
Cases with infected teeth .....	5
Cases with acute alcoholism .....	4
Good recovery .....	4
Poor recovery .....	2
Slightly improved .....	1
Perforation of cornea .....	1

Exposure and acute alcoholism seemed the most important predisposing factors. No foci of infection were found except teeth. Staphylococcus Aureus was the predominating organism in smears and cultures. Diphtheroids were found in two cases and pneumococcus in one case.

Three cases had hypopyon (including case with pneumococci in the smear) and all had severe type of ulcer with extensive involvement.

*Routine treatment:* Salicylates, milk and typhoid vaccine as foreign protein (typhoid used where milk was not effectual). Atropine and eye patch. Cautery with alcohol, in more severe cases with trichloroacetic acid and phenol, was used. The latter was very efficient. The case having

perforation of cornea was treated most conservatively. Saemisch Section was not satisfactory. Visual results were not encouraging, but would probably improve as opacities cleared. Dionine, in increasing strength, and hot compresses were used for this purpose.

## A Report on Hysterectomies\*

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When the chairman asked that I prepare something for this section, it occurred to me that it might be an interesting thing to make a comparison between my abdominal and vaginal hysterectomies. In going over the records, the historian at the hospital was able to find almost a thousand hysterectomies in the last fifteen years, which should be a large enough series to gather some data from. But, in attempting to analyze these cases, we found it rather complicated and on the whole, not overly satisfactory.

In a large per cent of these operations, where either all or part of the uterus was removed, other surgery was done, and sometimes considerable other surgery. In most instances, in the abdominal hysterectomies, the appendix at least, was removed, and in quite a few, much other surgery, such as cholecystectomy, was done. A good many of the abdominal cases had repair work, and in most of these cases of subtotal hysterectomy, the cervix was either amputated or treated with the cautery. In practically all the vaginal cases, excepting those operated for carcinoma, and in some of these, extensive repair work was done, and in some of them, other surgery. It was not at all unusual in checking these cases to find that some of them had a good many conditions which could be benefitted by surgery; for instance, fibroids and salpingitis, ovarian tumors, uterine tumors, and tubal disease, or almost any condition involving

the uterus and adnexa, complicated by extensive damage from labor. So we attempted to classify these cases from the etiological standpoint, only from the most prominent condition.

The abdominal cases were done on the average on much younger women, and the vaginal cases on older ones. The percentage of total hysterectomies in the vaginal ones was much higher than in the abdominal cases. On the other hand, the percentage of infections in the abdominal cases—that is, preoperative infections, was much higher, and also the amount of other surgery done at the same time, excluding repair work. So it is quite difficult to compare cases which could be considered parallel. I shall simply have to report the series as we found it, give my impressions, and allow you to have your own.

An attempt was made to preserve some of the adnexa, particularly ovarian tissue, and this was done in a very large per cent of the cases. I have the impression that a good many of the unsatisfactory results were due to later trouble with these organs which were left at the time of the first operation.

### HYSTERECTOMIES

Abdominal .....	763
Vaginal .....	175
Both Vaginal and Abdominal .....	11
<b>TOTAL NUMBER .....</b>	<b>949</b>

### ETIOLOGY

Conditions due to pregnancy and labor, fibrosis, bleeding, metritis, etc. ....	324
Infections, tubo-ovarian inf. etc. ....	301
Fibroids .....	197

\*Read before the Surgical Section, Annual Meeting of the Oklahoma State Medical Association, Oklahoma City, May, 1935.



Carcinoma	57
Polyyps	12
Ectopic pregnancy	18
Varicosities	25
Papillomatous cyst	6
T. B.	3
Decidual epithelioma	2
Dermoid	2
Sarcoma	1
Abdominal pregnancy	1

## ETIOLOGY IN ABDOMINAL CASES

Conditions due to pregnancy, labor, fibrosis, bleeding, metritis, etc.	243
Infections, salpingitis, etc.	301
Fibroids	144
Ectopic pregnancy	18
Varicosities	25
Carcinoma	21
Papillomatous cyst	6
T. B.	2
Dermoids	2
Abdominal pregnancy	1

## WHAT WAS DONE (ABD.)

Other surgery than removal of uterus	663
No other surgery	100
Subtotal removal, i. e. fundus	724
Total removal	39
Adnexa removed	321
All or part preserved	442

## ETIOLOGY IN VAGINAL CASES

Conditions due to pregnancy, labor, fibrosis, bleeding, metritis, etc.	81
Fibroids	51
Carcinoma	28
Polyyps	11
Decidual epithelioma	2
Sarcoma	1
T. B.	1

## WHAT WAS DONE (VAG.)

Other surgery than removal of uterus	117
No other surgery	58
Subtotal removal	70
Total removal	105
Adnexa removed	44
All or part preserved	131

## ETIOLOGY IN BOTH VAG. AND ABD. OPERATION

Fibroid	2
Carcinoma	8
Polyp	1

## WHAT WAS DONE

Other surgery than removal of uterus	7
No other surgery	4
Adnexa removed	6
All or part preserved	5
Complete removal of uterus	11

## DEATHS

		Per Cent
Abdominal cases	24	3.14
Vaginal	4	2.28
Both vag. and abd.	2	18.00
Total deaths	30	3.16

## CAUSES OF DEATHS

## Abdominal Cases

Infection	9
Ileus	2
Embolus	5
Pneumonia	2

Shock	1
Nephritis	1
Toxic goiter	1
Fat embolism	1
Mesenteric thrombosis	1
Acute dilatation stomach	1

## Vaginal Cases

Embolus	2
Heart block	1
Uremia	1

## Both Vaginal and Abdominal

Shock and Hemorrhage	1
Uremia	1

In looking up some series of hysterectomies which have been reported, I find the majority of them are abdominal operations and subtotal removal, and that the death rate varies a great deal. In a series of about 600 cases reported from Los Angeles, the most of which were subtotal and abdominal hysterectomies, the death rate was 1.9 per cent. Most of these cases were operated for fibroids and fibrosis. In a series of cases from the Vanderbilt University Hospital, a mortality rate of  $4\frac{1}{2}$  per cent is shown, of which the greater number were subtotal abdominal hysterectomies. A series of 335 cases from six different hospitals in Detroit, and 35 different operators, shows a mortality rate of 4.68 per cent. In 311 hysterectomies done at Peterson's Clinic, a death rate of  $4\frac{1}{2}$  per cent was reported. Davidson reports a death rate of 1.58 per cent, except in the Wertheim operation, in which he reports a death rate of 10 per cent. Pearse, in reporting 1900 consecutive supravaginal hysterectomies over a period of 25 years, reports a death rate of 1.7 per cent. In 122 cases of malignancy, he reports a death rate of 13.9 per cent. In 127 cases of complete hysterectomies for non-malignancy, he reports a death rate of 5.1 per cent. He states that the percentage of carcinoma developing in the cervical stump is less than one per cent. Fullerton and Faulkner report a mortality in 1078 pan hysterectomies of 4.1 per cent. In 609 supracervical hysterectomies, 4.4 per cent. In 164 vaginal hysterectomies, 3.6 per cent. They think the vaginal hysterectomy is preferable in a great many cases. Rinaman reports a series of cases with a mortality of 3.7 per cent, divided as follows: Vaginal hysterectomy, no deaths; supravaginal hysterectomy, 1.6 per cent; pan hysterectomy, 9.6 per cent. Witherspoon and Butler report 159 cases or pan hysterectomy,

73 vaginal and 77 abdominal operation, with a mortality rate of 5.3 per cent in the abdominal group and 2.7 per cent in the vaginal group. They conclude that the vaginal hysterectomy has many advantages. Heaney reports 565 vaginal hysterectomies done for benign pelvic disease. There were two fatal cases in this series. He states that the vaginal hysterectomy is the operation of choice except in such cases where there is a question of completion.

Dr. Carl Bauer of Chicago, studying a series of both vaginal and abdominal hysterectomies came to the conclusion that the vaginal hysterectomy was safer and that there is a definite decrease in the morbidity, and he also concluded that there is a 50 per cent increase in the morbidity when the cervix is removed, over the supravaginal amputation.

There is considerable disagreement about the advantages and disadvantages of leaving the cervix. The majority of opinion seems to be that the advantages of the simpler operation are greater than its disadvantages.

My own impressions are that the subtotal hysterectomy is both simpler and safer, and that it had better be done, except where there is definite indication for the removal of the cervix. Most of the disadvantages of the subtotal hysterectomy can be removed by the thorough treatment of the cervix with the actual cautery. I have seen some of these cases who had an annoying discharge from the cervix, but there is rarely any trouble where the cervix has been treated with the cautery, and if it has not been, the discharge is usually easily stopped by the use of the cautery. The entire mucosa of the cervix can be destroyed if desired, and it is a simple matter to enucleate the cervix per vagina if desired. I, myself, have seen only two cases of carcinoma develop in such a cervix, and in neither case had the cautery been used. The leaving of the cervix simplifies and shortens the operation considerably. I think, also, that where the cervix is left, a better support for the vaginal vault is obtained. It is also my impression that the vaginal operation is safer than the abdominal, and that the

patients have an easier convalescence. The vaginal operation is adaptable also to so many modifications. In many instances, a pan hysterectomy can be done easier if the first half of the operation is done through the vagina. This is particularly applicable in difficult cases where it is impossible to deliver the uterus.

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#### DISCUSSION

*Dr. A. R. Sugg:* I appreciate very much Dr. Hudson's paper. It emphasizes quite distinctly the impossibility, or the fact that it is difficult to compare the technique and the final outcome of these two types of operation. In Dr. Hudson's paper, he was able to offer a distinct comparison as to the final outcome in the very large series he has been able to use. There is a great variety of different percentages with reference to the mortality in either type of operation, ranging all the way from one to five per cent, and that makes it very difficult to tell us which of these two types should be done in a particular case. I wish to thank Dr. Hudson for this picture, because that is the closest to a vaginal hysterectomy I have ever seen in my life, and I have never in my life seen whatever there is to be seen with reference to this type of operation. Those of you who are older either decided that the vaginal hysterectomy was not the one for routine use, or else got lazy and did not teach it to us. The three or four things that have occurred to me from making an effort to try to find out how to do that particular type of operation, lies in the fact that to me I know it would be easier to do the total and subtotal hysterectomy through the abdomen than the vagina. In either type, all can be done through the abdomen and not all through the va-



gina. The matter of infection should be thought of. Here the abdominal route would compare favorably where you have to deal with the multiple, many types of bacteria that are in the vagina and are there all the time, because so many are subtotal and not total hysterectomies. As to shock, in something over one hundred, my very small series, I have had one death and that was due to shock. Another thing that the paper mentioned that Dr. Hudson didn't discuss, is the matter of other operations done at the same time. A rather large percentage of these cases are abdominal hysterectomies where other types of operation are also done at the same time. This, of course, cannot be done by the vaginal route, and certainly not through exploration that can be done by the abdominal route. One thing that I consider an important step in a hysterectomy is the support to the vaginal wall. I have seen one case in the last nine months, done, I am glad to say, by somebody else, in which the vagina was not supported properly and she had complete prolapse of the vagina. I know of no more distressing and disgusting condition than prolapse of the vagina. A good surgeon may be able to do that by vaginal hysterectomy, but I couldn't do it I am sure, and it doesn't occur to me that it would be as simple a procedure as by the abdominal route. Another thing, I should like to ask about the percentage of bladder injuries, as I think that is to be considered.

I place these remarks on outcome with the essayist on his outcome in abdominal hysterectomies. I have done something over a hundred abdominal hysterectomies of all types, and consider that to be a very satisfactory operation, one fraught with not too much danger of mortality, and I know nothing of the vaginal hysterectomy. I am looking forward to the other discussions on this paper.

*Dr. G. K. Dickson:* I feel that comparing a vaginal hysterectomy and an abdominal hysterectomy is absolutely impossible. There are cases in which the vaginal hysterectomy is preferable and there are cases in which the abdominal hysterectomy is preferable. I put down these cases as divided in three classes, the total hys-

terectomy, the sub-total hysterectomy, or vaginal hysterectomy. I always try to preserve the cervix. I see these cases first, and if the cervix does not look good I will take a section from it and have it examined before I ever operate, to rule out any carcinoma. If this cervix looks very irritated, chronically infected and badly lacerated, then this case should have this cervix removed by some method. Now, in this same case, if you have a badly lacerated cervix and a large tumor, or we have some adnexal pathology or possibly an appendix, or if we want to explore the gall bladder and stomach, then an abdominal total hysterectomy is preferable. If we have pathology in the adnexal region or an appendix, then a sub-total abdominal hysterectomy should be done. Now in the vaginal hysterectomy, there are cases in which it should be done. The technique is followed here in these pictures, which are marvelous pictures. If the patient is a very poor risk and the tumor is small, then a vaginal hysterectomy can be done. If my patients are in poor shape, have been bleeding, and will not stand very much shock, then a vaginal hysterectomy is done, providing the tumor is small. I do not get as good results with a clamp vaginal hysterectomy as in the ordinary classical type of hysterectomy. If I see a cervix which is carcinomatous, I do not do anything. I agree here that radium and irradiation should be used. If the patient has carcinoma of the fundus, I think vaginal hysterectomy is completely ruled out. I believe that all these cases in which there is carcinoma of the fundus should have an abdominal hysterectomy so you can remove as much tissue as possible. A vaginal hysterectomy where there is a small tumor and nothing else to do is, I think, the desirable operation. I didn't get time to figure out the percentage of vaginal and abdominal hysterectomies as given here, but I run about one in twenty cases where I feel that I can do a vaginal hysterectomy. Where a case has been operated previously in the midline and there is nothing to complicate going back in the abdomen through the midline, I go back in the abdomen through the midline and do the hysterectomy, either total or subtotal.

*Dr. Kuhn:* I don't know whether I should discuss vaginal hysterectomy or not. I learned to do them a good many years ago, with a man who did them by preference. I returned after an absence of several years, and when I returned he was using the abdominal type. I questioned him and he said, "I used to think there was a good indication in every case, but the older I grow and the more I do, the fewer the indications, and therefore the vaginal hysterectomy in my hands today is so rare that I can say I have practically stopped doing them." This was J. Wesley Bohr, who was perhaps one of the most efficient operators I have ever seen. It is a fact that the indications for vaginal hysterectomy are so rare that it should be relegated to an operation of necessity rather than choice. There is no question to anyone that the approach can be made with greater accuracy through the abdominal route than through the vaginal route. The vaginal hysterectomy has only one thing to justify it and that is possibly—I won't even say probably—lesser shock. In the vast majority of instances of those patients who are subjected to vaginal hysterectomy a treatment of some type would answer the purpose just as well and very probably better. The most important of all the requirements in doing hysterectomies is to avoid damage to the veins of the transilioform plexus. Broad ligament surgery is an extremely dangerous surgery. It is dangerous because of the inability to manipulate these large veins with the necessary care, therefore the most care that can be exercised should be exercised. This just cannot be done by the vaginal route. It is not possible to do a vaginal hysterectomy without trauma to the transilioform plexus. In the abdominal route, on the other hand, you can visualize the transilioform plexus and before any trauma of any kind is done to these veins, they may be ligated high enough and far enough out so that post-operative thrombii do not form, and therefore post-operative embolism is really a thing of the past with hysterectomies. The same is exactly true in the presence of infection. Infections are a very definite contra-indication to vaginal manipulation. Now as to shock and the death rate, I al-

most hesitate to say this, but in a series of four hundred hysterectomies that have been done at the University Hospital in the past four or five years, our death rate has been nil. We have had no pulmonary complications. There are no pulmonary emboli. When we come to consider the type of patient with which we have to deal, they are often extremely exanguinated because of bleeding and have gone through a long preliminary infection neglected, with great, large fibrous uterus, or with carcinoma of the fundus, most of them having gone months before they consult a doctor, you will realize that this is an entirely different type than the type which comes to the average man in general practice. So I say this, at least in my experience and in the experience of one or two men of universally wide reputation, vaginal hysterectomy has been practically relegated to the discard, and is reserved only for those very, very rare cases where vaginal hysterectomy is the only method of approach.

*Dr. Hudson:* In the discussion someone asked about the danger of entering the bladder in the vaginal operation. This is certainly very slight. The bladder can be visualized and kept out of the way better with the vaginal operation than with the abdominal. In fact, in a total abdominal hysterectomy it often lessens the difficulty of the operation if the vaginal wall and the bladder are freed from the cervix per vagina before opening the abdomen. The support of the bladder and vaginal wall was mentioned, and I quite agree that this is very essential, but as good a support can be obtained in any case by the vaginal operation and in many cases very much better. For instance there is no abdominal operation which is very efficient in the correction of a cystocele. The vaginal operation can be modified in many ways. The uterine fundus can be removed, or the fundus can be removed and the cervix opened and the mucosa removed and the remaining muscular tissue used exactly as in the Watkin's interposition operation.

In regard to infection following the vaginal operation, I think this danger can be almost ignored. About the worst thing that can happen is an accumulation of



fluid between the peritoneum and the vaginal wall, and you will not have much trouble with this if a small drain is inserted through the vaginal wall but not through the peritoneum.

After listening to Dr. Kuhn, I think I should do something about the abstract which I obtained on this subject this spring. According to it, instead of the vaginal hysterectomy having been discarded, it seems to be quite the reverse. For instance, Dr. Heaney of Chicago—I think you all know who he is—reports a series of about 500 and states that he believes the operation is not only very much safer than the abdominal, but should be done in practically all instances where the uterus can be removed through the vagina. Another series of cases in Chicago shows a much lower death rate and less morbidity. The conclusion was that the vaginal oper-

ation where it can be done is the better one and the safer one.

I will say this about the vaginal hysterectomy. It is a harder operation to do. If that makes any difference, you had better not tackle it. It is a more difficult operation for the operator, but I think it is easier on the patient. Convalescence is more rapid and the risk is less.

I was sorry that I could not get even a small series of cases which were similar enough in all respects to make a good comparison possible. As I stated in the paper, I found that about the only thing I could do in comparison was to give my impression, but I believe that anyone who will take the trouble to have this subject abstracted will find that the vaginal operation is not obsolete, but is definitely indicated in a rather large per cent of cases, and that from the patients' standpoint it has many advantages.

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## Treatment of Acute Gonorrhea by the General Practitioner\*

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J. WORRALL HENRY, M.D.  
ANADARKO, OKLAHOMA

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I am not discussing this subject from the standpoint of the specialist or from that where institutional care is given, but from the point of the general practitioner in his office.

During the past few years of economic distress, the family doctor has been called upon to care for and treat a great many things that he formerly referred to the specialist, or that the patient took directly to that source himself. This is true in the treatment of gonorrhea.

There is no reason why the man doing general work should not be able to do this satisfactorily and efficiently. Most of us have the necessary equipment and necessary knowledge to do so if we care to take the time and trouble.

We will take up first, the preferred

methods of treatment as given by 935 American urologists and printed in the January 18, 1933, issue of the Medical Journal and Record. "They show there is considerable divergence of individual opinion as to the most effective method of treatment, there is nevertheless a general harmony of thought on the elementary principles, on which treatment should be based. These may be set down as follows: (1) That local treatment, properly applied, is the most effective agent in combatting the infection; (2) that the chemical compound employed should be bland and non-irritating; (3) that it should stimulate tissue reaction in the urethra and thus act as an aid to the natural reparative forces."

"The replies show furthermore, that American urologists are divided in the therapeutic sense as regards gonorrhea

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\*Read before the Urological Section, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, May, 1935.

into three major groups: (1) a group of 250 who favor the silver compounds exclusively; (2) a group of 108 who favor permanganate irrigations exclusively; (3) a group of 332 who favor the silver compounds in combination with potassium permanganate irrigations.

Then there are four minor groups: (1) a group of 48 who favor one of the dye preparations (mostly acriflorine); (2) a group of 46 who favor a dye in combination with the permanganate irrigations; (4) a group of 89 who use all methods, according to indications, without any particular preference.

"Of the 32 urologists not included in these groups, 12 declared themselves opposed to all local treatment, 15 declared in favor of silver nitrate irrigations as the best form of treatment, and five had favorite methods of treatment which defied classification.

"From this data it is seen that the large preponderance of the American urologic opinion (79.4 per cent) is in favor of the use of the silver compounds, either alone or in combination with irrigations of permanganate or a dye.

"When we analyze this data further, we find that urologists are again divided into three groups: (1) a group of 506 who favor the so-called mild silver products; (2) a group of 268 who favor the so-called strong silver products; (3) a group of 86 who favor a miscellaneous group of silver products of various types which cannot be grouped together. This classification of "mild" and "strong" is based on the clinical reaction of these products in the human urethra, and not on the U. S. P. classification of mild and strong silver proteins, because many of these compounds are not proteins.

"It is obvious therefore, that the majority of American urologists prefer the silver compounds of the clinically mild type in the treatment of gonorrhea.

Of the total number of urologists (506) who prefer the "mild" silver compounds, 322 (64 per cent) expressed their preference for argyrol, 46 (14 per cent) for neosilvol, 30 (6 per cent) for silvol, 59 for silver nucleinate, 25 for silvogon, 20 for neoreargon, 20 for argo-iodin, 17 for solar-

gentum, 12 for lunosol and 21 for mild silver protein, U. S. P. A number of other products were mentioned in scattering numbers to the total of 29 silver products.

"Regarding the strong silver compounds, 264 urologists are recorded as favoring protargol, 2 for strong silver protein, U. S. P. and the rest scattering." With the foregoing elementary principles and data in mind as expressed by our leading urologists of America, let us consider the treatment of a case by the general practitioner.

A young man comes to your office with a urethral discharge of two days duration, with a history of exposure during the past ten days. The only thing he complains of is the discharge and burning on urination. A slide is taken, and with gram stain shows a host of gram negative intra-cellular, coffee bean shaped diplococci. A two-glass test of the urine shows a cloudy first glass and a clear second glass. The infection is then assumed to be an Anterior Urithritis and every effort is made to keep it from extending to the posterior urethra.

Now is the time to have a forceful talk with your patient. Impress upon him the fact that he has a serious infection and that to get well lies more in his power than in yours. You are the directing or guiding factor, but that his own behavior will determine whether he be cured or not. Strictly prohibit any sexual excitement. This does not mean refraining from coitus alone, but from reading racy books, pictures, close association with the opposite sex, as in dancing or anything that will stimulate him sexually no matter how mildly. Also have him refrain from alcohol, carbonated beverages, rich, greasy foods and those highly seasoned. Prescribe a plain, wholesome diet, and encourage the drinking of large amounts of water. Regular hours of rest and plenty of fresh air are of marked help. Keep the bowels well open; if necessary give some mild laxative. You should further advise him to do no heavy lifting or straining, from the danger of epydidymitis, and to wear a suspensory bandage or athletic supporter.

With these things understood you can



now begin your actual treatment. Take a weak solution of potassium permanganate 1-8000, preferably slightly warm, and with your irrigator about two feet above the urethra gently irrigate the anterior urethra with at least a quart of the solution. I use more. The nozzle of your irrigating tip is held just far enough into the meatus that your solution just goes down to the cut off muscle.

Following this irrigation, you now gently instill just enough 10 per cent argyrol solution, freshly made, to comfortably fill the urethra. This usually takes about one dram. Have the patient hold it in the urethra four or five minutes by the watch. Then allow what will to run out, and tell your patient not to urinate for two hours if possible. Do this procedure daily, and every day make your two-glass test, as this will give you an indication as to how your treatment is progressing. After the first few days, four or five to a week, and after I have had a chance to teach the patient how, I usually turn the argyrol solution over to him and have him use it at home, night and morning, always after urinating. In uncomplicated anterior urethritis your discharge will begin to lessen at the end of the first week or ten days, and gradually diminish from then on. When your discharge gets very slight is the time to make an examination of the prostate gland.

This is done with the gloved finger in the rectum. Let me remark here, be gentle. Palpate the gland with the ball of the finger, sweeping the finger from the center outward with gentle downward pressure. Don't punch or bruise the gland. You may find the prostate somewhat enlarged and tender, indurated or soft, usually accompanied by some heat. If this procedure causes pain, your massage is too firm. If it causes an increase in the urethral discharge discontinue until the discharge lessens. This massage should not be done more than twice a week. At this stage you can usually defer your urethral irrigations to the days on which the massage is given.

When your two-glass test shows both glasses clear and no G. C. shows in your microscope you can reasonably assume

that the case is cured. However it is well to check up on your patient for some time afterwards, especially as to massage. This can be carried on for two or three months. A non-specific morning drop is often caused by too limited massage as well as by too strong urethral medication.

I have just outlined the treatment of an uncomplicated case of Anterior Urethritis. Unfortunately the doctor sees few cases as simple as this. The great majority of the cases involve the posterior as well as the anterior urethra. They are often posterior when you first see them, or become so in spite of all you may say or do to the patient.

The treatment of Posterior Urethritis as far as medication goes is the same as that of the anterior, but you must get your irrigations and injections back into the posterior urethra. For your irrigations this is done by raising your irrigator to a higher level, 3 or 3½ feet thereby increasing your pressure to force the solution past the cut off muscle and into the bladder. When doing this I have my patient strain down as though urinating. After a time or two they do this very nicely. If your pressure is too great you may cause an epididymitis. If this occurs, discontinue all local treatment until this condition clears up. Rarely do you have to confine your patient in bed even under these circumstances, if you give him proper support with a suspensory, hot sitz baths, laxatives and copious drinking of water.

When you return to your local treatment make your pressure less and perhaps your medication milder.

Again as in the treatment of Anterior Urethritis, after both glasses in your two-glass test are clear or only slightly hazy, you may begin your prostatic massage, not over twice a week, with the same technic. Some of you probably will ask about the use of steel sounds at this stage of your treatment. Personally, I use them, giving a full dilatation once or twice a week, depending on the case and the way the patient reacts to the soundings. Not infrequently your patient will have a chill following the passage of sounds, vary-

ing from a chilly sensation to a genuine rigor. I want to state here as I did about massage, be gentle. You can do untold damage with a steel sound if you are not careful. Never force a sound. If your sound will not pass easily and by practically its own weight there is one of two things wrong: You have too large a sound, or your technic is wrong. (I am not speaking of strictured urethra, although with a strictured urethra, the gentler you are the better results you'll get.)

Sometimes after a patient's discharge has stopped and you begin using sounds, his discharge will re-appear and show positive. This means that in stretching the urethra you have "kicked" out some hidden diplococci that would have caused your patient future grief and you embarrassment. If the meatus is small, it is always a good plan to do a meatotomy. This can be done with a local anesthetic with very little discomfort to your patient. The freer the drainage the better off your patient.

I have purposely left until last two very moot questions in the treatment of Gonorrheal Urethritis, and they are the use of urinary antiseptics by mouth and the use of vaccines and non-specific foreign proteins.

In regard to the first, urinary antiseptics by mouth: The very fact that there are so many on the market should tell us that their value in treatment is not all that is claimed for them by their makers. However, as far as I can determine none of them are harmful. We have all used them and will continue to do so, if for no other reason than that certain patients feel they must take three or four doses of medicine by mouth every day before they are being benefitted. So use the one you like best and your results will be just as good as those of Doctor Blank down the street who uses something entirely different.

Theoretically, vaccine treatment is the one of choice, however any of the stock vaccines now on the market have not proven successful in my hands, although there is a gonococic filtrate offered to the medical profession which I have not tried.

Now the non-specific foreign proteins: you can again have a wide field to choose from, either intravenous or intramuscular. I have used both kinds. Some cases seem to respond remarkably well and others not at all. It leads one to this conclusion: In your simple cases almost anything you do will give both you and your patient complete satisfaction, and in your stubborn cases no matter what you do, you'll wish you had done something else.

*To sum up:* Your sheet anchor in the treatment of acute gonorrhea whether Anterior or Posterior, is local treatment with a mild silver preparation accompanied by permanganate irrigations, gentle prostatic massage and sounds in the later stages of the disease; a regulation of your patient's mode of living so that he may derive the greatest benefit from your efforts. If the above routine be carried out with tact, gentleness and patience on the part of the doctor he will be able to care for this type of case with benefit to himself and gratitude from his patient.

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#### Peripheral Neuritis Caused by Prolonged Use of Dinitrophenol

J. Ernest Nadler, New York, (Journal A. M. A., July 6, 1935), deals with late or delayed cases of poisoning by dinitrophenol. The report is based on the study of twenty-two persons who took alpha-dinitrophenol (1-2-4). Fifteen were seen in private practice and the remainder in the wards of Bellevue Hospital. Sixteen showed no deleterious effects from the use of the drug; of the remaining six cases, in three a rash developed, in one loss of taste and in two peripheral neuritis. The six patients showing toxic symptoms were taking the drug for obesity and gave a negative history for allergy, neuritis, arthritis, alcoholism, diabetes, tuberculosis, or liver or kidney disease. Loss of the sense of taste as a result of intoxication by dinitrophenol developed in one patient after she had been taking the drug for thirty-six days. This loss was complete for "sweet," "sour," "salt," and the like, and she experienced a "coppery" taste in her mouth at all times. She was not anesthetic to epicritic and protopathic stimuli; i. e., to light touches, pin pricks and temperature. The sense of smell was unimpaired. The drug was not stopped and her taste gradually returned to normal in a month. The two cases in which peripheral neuritis developed following prolonged use of this drug are reported in some detail. These patients were on a diet containing adequate amounts of the vitamin B complex. They showed very striking sensory symptoms but no motor or trophic disturbances. The condition started in the toes and exhibited various disturbances of sensation, such as prickling, numbness and pain. Paresthesia persisted long after its original cause had been removed. This delayed poisoning is due to repeated exposure to small amounts of dinitrophenol and not to an accumulation of the drug in the body.



# Laws of Interest to the Medical Profession

DR. LOUIS H. RITZHAUPT, PRESIDENT  
GUTHRIE, OKLAHOMA

The State Election Board has prepared a booklet that every member of the medical profession should have. A copy is yours for the asking; write to J. William Cordell, Secretary of State Election Board, State Capitol Building, Oklahoma City, and ask for the booklet entitled, "List by Title of Bills and Resolutions," passed by the Fifteenth Legislature and which became law. In this book you will find the title of the following laws which I will summarize for you. I feel that this review should be a continuation of the report of the Committee on Public Policy and Legislation.

*Senate Bill No. 1.*—This bill provides three million dollars for the care of the indigent and widows of the State. The State Board of Public Welfare includes the State Superintendent of Health as a member, while the County Superintendent of Health is a member of the County Welfare Board. This is the first time in the history of Oklahoma that the medical profession ever received such recognition. The County Health Officers should see that funds are provided for the care of the indigent sick from their county allotment.

*Senate Bill No. 14.*—This is known as the "Oklahoma Habitual Criminal Sterilization Act," and provides for the payment of the surgeon performing the operation. No surgeon who shall skillfully perform an operation of sterilization authorized under and pursuant to the provisions of the Act shall be held accountable therefor.

*Senate Bill No. 15.*—This bill amends the previous Crippled Children's law. The law now provides for medical and surgical treatment and hospital and convalescent care for children who are afflicted with any malady or deformity which can be remedied, whose parents are unable to provide the same. It is mandatory that one-tenth mill levy be made in each county, and that the money raised be spent in institutions, other than state institutions, that are approved by the Committee on Standardization. This Committee is com-

posed of five physicians or surgeons appointed by the Governor, three of whom are from a list of nine names recommended by the Oklahoma State Medical Association. A State Commission for Crippled Children was created, composed of the State Superintendent of Health as Chairman, the Dean of the Medical School, and the State Superintendent of Public Instruction. This commission will probably be the one designated to handle the federal grant for crippled children. Hospitals of the state will be subject to the following three classifications:

1. Crippled Children's Hospital, prepared and qualified to handle every type of cases and meeting the requirements of the American College of Surgeons, with specialists in orthopedics and plastic surgery on the staff.

2. General hospitals shall meet the requirements of the American College of Surgeons and have a specialist in general surgery and general medicine on the staff. They may be approved to accept any type of malady except chronic orthopedic or plastic cases.

3. Standard hospitals are those meeting the standards and qualifications set by the committee and subject to approval for a limited and specified service other than orthopedic or plastic cases.

4. Convalescent homes are to be approved under rules set by the committee; they must have ten beds and be near to and operate in conjunction with an approved crippled children's hospital.

It has been charged that this law as it now is will lower the medical and surgical treatment of the crippled child. I feel, however, that—if the Standardization Committee is composed of careful, intelligent, thinking doctors—the service to the children will be extended into nearly every county without any deleterious results. Surely there are doctors in nearly every community who will gladly give their services to the children about them in need of help.

*Senate Bill No. 55.*—Although not actually a medical bill, this does interest the doctor. It provides that persons proceeded against in criminal actions and acquitted on the ground of insanity shall be committed to a state hospital for insane, there to be held and kept as a patient until legally discharged.

*Senate Bill No. 107.*—This amends the law relating to nurses, and provides that: They must be twenty-one years old, and have a high school education or its equivalent; they must have graduated from an approved training school, and pass a successful examination before the State Board of Nurses' Examiners, before they can be registered. This bill was introduced by me at the request of the Nurses' State Board.

*Senate Bill No. 194.*—This bill authorizes an annual levy on an advalorem basis of not to exceed one mill for the care of tubercular patients in their respective counties, for the prevention of other devastating diseases and epidemics, and for the promotion of public health. It also provides for the expense of the County Department of Health and for the compensation of its employees.

Every county medical society should feel it their duty to encourage the county commissioners and county excise board to make the full levy as provided by this law; also, the mandatory levy of Senate Bill No. 15.

*Senate Bill No. 347.*—This is the Uniform Narcotic Act, providing that no person shall manufacture, compound, mix, cultivate, grow or prepare narcotic drugs, without having first obtained a license to do so: (1) From the State Board of Pharmacy, if such person be an apothecary or pharmacist. (2) From the State Board of Medical Examiners, if person be a hospital or physician or surgeon licensed to practice medicine in this State. (3) From the State Board of Veterinary Examiners, if such person be a veterinarian. (4) From the State Board of Health, if such person be a wholesaler or manufacturer or laboratory, or (5) from the State Board of Dental Examiners, if such person be a dentist.

Section four sets out a rigid requirement for the individual securing the license. Section nine regulates the use of

narcotics by the physician in accordance with the federal requirements. The bill further provides that the State Health Commissioner may secure confiscated narcotics; that the board or officers issuing the license to any individual may revoke or suspend it on notification by the court of his violation and conviction under any part of the narcotic act. The protective feature for the physician is that the person obtaining a narcotic under false pretense or subterfuge, and not the doctor, is subject to arrest and conviction.

*Senate Bill No. 349.*—This bill relates to the practice of medicine and surgery in the State of Oklahoma and was introduced at the request of Doctor Byrum, who, as Secretary of the Board of Medical Examiners, served so faithfully and efficiently for seventeen years. It changes the time of examinations and provides quasi-judicial powers for the Board, allowing them to revoke or suspend the license of a physician or surgeon who has been convicted of any felony within or without the State of Oklahoma. Appeals from the Board's decision shall be taken to the State Supreme Court.

Another matter of great importance to the medical profession is the appropriation made by the last legislature for the salaries, maintenance and equipment of the medical institutions of the state, and the State Health Department, the total amount being five million, one hundred and seventy-eight thousand, four hundred dollars. Adding this to the one and one-tenth mills advalorem levy authorized by Senate Bills 15 and 194, we have the very gratifying amount of seven and three-quarter million dollars to be expended by the state and counties during the next two years for the health of the people of Oklahoma. Besides this enormous sum, Senate Bill No. 1 provides three million dollars for the care of the indigent and widows.

This is the largest appropriation ever authorized by any legislature for this type of work. The fifteenth legislature passed more laws influencing the medical profession than any other state assembly except the first. Although we failed to pass the Basic Science Bill, we may feel justly proud of the accomplishments of the Committee on Public Policy and Legislation.



## Report of Delegates to the 1935 A. M. A. Meeting at Atlantic City

Your representatives do not desire to tire you with uninteresting details of the Annual Meeting of the American Medical Association at Atlantic City the second week in June, and will only touch upon what we considered the points of most interest to the general profession of Oklahoma, and to those who desire a more detailed report, would suggest that they refer to the complete record which will be found in the last issue of the Journal for June and the first issue for July.

This meeting will go down in history as the largest medical meeting ever held any place in the world as the registration was over 8,500 which did not include the Canadian Medical Association, who were our invited guests.

There has been so much propaganda relative to State Medicine and compulsory health insurance that our profession has become more or less alarmed, but will say that those who attended the recent meeting came away with very much better feeling, and while the medical profession are in favor of health insurance, it must be under the supervision of the medical profession and be compulsory.

The Sunday preceding the 1934 American Medical Association Meeting in Cleveland someone gave out the report to the Associated Press in Chicago, that the College of Surgeons had gone on record for compulsory health insurance which proved to be more or less erroneous and the representatives of the College of Surgeons endorsed all action taken along this line at this year's meeting. Hereafter the two organizations will cooperate as both are working for the best interest of the medical profession, hospitalization, etc.

The opening day, was ushered in with one of the heaviest rainfalls that New Jersey ever experienced, but Atlantic City, being more or less like Vienna, there was no appreciable disturbance from the water as soon as it ceased falling, and the remainder of the week the weather was all that could be desired and what all the resorts advertise.

The House of Delegates met at 10:00 a. m. with practically all of the Delegates present. The Speaker, Dr. Warnshuis, who arrived on Sunday, received a wire telling him of the unexpected death of his son, so that he was not present Monday and Tuesday, but returned on Wednesday. The day was taken up with reports, all of which have been published in the Journal and the appointment of reference committees, upon one of which Oklahoma was represented.

After the adjournment, many of us visited the scientific exhibits in the Auditorium, and will say that no place in the United States is better equipped to handle a meeting of this nature than Atlantic City, although Kansas City has a new auditorium which is just about completed and they claim that they will be able to take care of the 1936 meeting just as efficiently as Atlantic City did. We are sure that with the wide awake bunch which Kansas City has, that the next meeting will be handled in a business like way. Your delegates were very active in bringing the meeting to Kansas City, so that we could have a larger repre-

sentation from Oklahoma than could be expected with the meeting in some city farther away.

On account of the heavy downpour, the golf tournament and banquet were postponed until Tuesday. Two Oklahomans were among the prize winners and one was honored with the vice-presidency.

Monday night the New Jersey Medical fraternity tendered a banquet to the official American Medical Association body and besides a very good floor show and an excellent banquet we were entertained by Senator Ham Lewis (he with the pink whiskers) who made a very interesting talk and brought out the point that the medical profession when united had a great influence over national affairs; also, at the banquet we were favored by a talk from the former senator and ambassador, Walter Edge, as well as the reception address by the mayor and the presentation of a gold emblem to the Association as a permanent token of invitation.

Tuesday was taken up with regular routine official business of Delegates. The open meeting Tuesday night was the largest ever held at any previous meeting, as several thousand were in the hall and at least three thousand were turned away unable to gain admission. After doing a great deal of routine business, Tuesday afternoon the House of Delegates went into executive session at which time the subject of contraceptives and birth control were considered and a committee appointed by the Board of Trustees, who were to study these two problems and will report at the 1936 session.

Wednesday the scientific session opened and we took ourselves off to our different branches, in all of which outstanding men from the Canadian Association appeared on the program, as well as some from England. Wednesday night was taken up with alumni banquets, which is always very enjoyable, as we get to see all of our college chums again whom we have not seen for several years.

Thursday afternoon the House met at 1:30 to receive reports of the committees and elect officers for the coming year to decide upon a meeting place for 1936. Dr. J. Tate Mason, a prominent surgeon of Seattle, was elected president-elect; Dr. K. M. Lynch, Charleston, South Carolina, vice-president; Dr. Olin West was again unanimously elected secretary; Dr. Herman L. Kretschmer was re-elected treasurer; Dr. Nathan B. Van Etten of New York, who has been vice-president for the last two years, was elected Speaker of the House; Dr. Ralph A. Fenton and Dr. James R. Bloss were elected trustees to fill the two vacancies.

Our secretary, Dr. L. S. Willour, spent several days in Atlantic City and was very busy calling upon exhibitors and secured several advertising contracts for our Journal which is mutually beneficial to all members of the Oklahoma State Medical Association.

Respectfully submitted,

McLEAN ROGERS,  
HORACE REED,  
W. ALBERT COOK.

# THE JOURNAL

OF THE

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## EDITORIAL

### MEDICAL ECONOMICS

The report of the Bureau of Medical Economics presented by Dr. Leland to the House of Delegates at the Atlantic City meeting contained much of interest to organized medicine in Oklahoma. This report showed that investigation had been made of nearly two hundred experiments in medical service carried out by County Medical Societies in the United States. The variety of experiments differed so widely that classification was impossible, however, in most all instances the plans in general involved the following steps:

1. Study of local medical facilities to determine the nature and extent of medical problems for which the adjustment is needed.

2. Definition of persons or income groups for whom medical benefits should be provided.
3. Method of determining patient's ability to pay.
4. Amount and nature of medical service to be provided.
5. Organization and coordination of community medical services, supplemented by units of administration when necessary.
6. Systematic movement of applicants for medical care.
7. Manner of presenting a plan to the public and method of securing members.
8. Method of making collections or receiving payment for medical care.
9. Method of remunerating physicians for their service to patients receiving benefits under the plan.
10. Administrative details.

In the development of any plan there are three distinct dangers pointed out:

1. Danger of adopting a plan that will prove undesirable and also difficult to change.
2. Possibility of stimulating counterfeit plans by irresponsible persons.
3. Danger that the public may be educated to the false belief that good medical care can be furnished for too low fees.

Should you be interested in reading this entire report it can be obtained by request to the Bureau of Medical Economics, American Medical Association. Having had Dr. Leland before our Association at the last annual meeting we are perhaps more interested than most groups in this work that he is doing.

### IMPORTANT

The following communication from the Committee on Legislative Activities of the American Medical Association was received after the foregoing editorial was prepared and being a further statement



of facts along the same line as those expressed in the editorial, I feel that its publication is warranted and that those interested in this subject will find a wealth of information directly applicable to the question discussed:

Information coming to the Committee indicates that the action of the House of Delegates at the Atlantic City Session, in consideration of Sickness Insurance, has in some instances not been fully understood. The misconception has to a degree been advanced by reports in some journals and headlines in public newspapers to the effect that sickness insurance has been given broad approval by the American Medical Association. Some groups are said to have planned to act on this supposition.

The report of the Reference Committee of the House of Delegates has been published in the Journal and the Special Report of the Bureau of Medical Economics will soon be available to members of the Association. It is urgently recommended that both the Special Report of the Bureau of Medical Economics, containing an analysis of the various plans at present in operation, and the report of the Reference Committee, which were adopted by the House of Delegates, be carefully studied before any plans are considered. No county society should consider the creation of any new social machinery for the extension of medical service or collection of compensation for such service before the existence of a real need for such change has been demonstrated and the requirements and available existing facilities have been carefully appraised. The report of the Committee states that "Analyses show that the class for which special provision is necessary is far smaller than most lay-writers and the results of so-called 'surveys' would indicate." The economic problems of the individual cannot be adequately dealt with on the basis alone of his classification in the group of those who receive low incomes. Social workers have accordingly long recognized the necessity of the investigation of the problem of each individual. Upon this basis is the method of individual study or "case work" of social service founded. The problem of needed medical service to each person of

the group is also an individual one, and one which cannot be met by group classification.

Based upon an investigation of the resources of the individual, an adjustment of fees for needed medical services, according to ability to pay in graduated installments, in most instances meets the problem of the individual patient who is not wholly indigent. It is to this type of organization that the Legislative Committee referred in a previous communication as meeting public and individual requirements. If the individual is indigent, he obviously cannot be expected to pay for medical service on an adjusted fee basis, nor is he provided for in proposed sickness insurance or any plan other than charitable or direct government indigent relief. In that instance medical costs are only one phase of the individual's economic distress, and his problem requires more comprehensive measures than simple provision of medical services.

A group purchasing an undetermined amount of medical service upon a prepaid fixed premium basis offered to all, within broad income limits, who apply, sooner or later will include a large percentage of individuals who can and have previously supported medical practice upon normal private basis. Experience has shown that prepayment medical service has not been salable on the basis of adequate fees for the physician, as evident in experience here and abroad.

Some of the effects of such plans are as follows: (1) A large amount of medical work will be done on a financial basis which is inadequate to provide for maintenance of proper standards. (2) Those not included in the plan will be educated to demand medical services at correspondingly low fees. (3) The operation of such plans over a period of average conditions will not add to the sum total of fees derived from the income group insured, and aside from possible temporary changes in distribution will simply reduce more professional services to an inadequate financial basis. (4) The establishment of such plans will create a pattern which, although undesirable, it may be impossible to change or discard, and may therefore lead to still broader adoption of objec-

tionable practices. (5) There is reason to believe that some local plans, even though now apparently satisfactory, inherently possess the same weaknesses and destructive tendencies as have been evident in similar patterns of operation in foreign countries. (6) The questions of contract practice, legal responsibilities, and state insurance regulations encountered, as well as the drift to solicitation of patients and violation of medical ethics cannot be presented here. (7) Extensive systems of voluntary sickness insurance invite competitive offerings by irresponsible people, and in Europe have created conditions so chaotic as to advance the establishment of compulsory insurance by legislative act.

Less populous communities in which the medical and financial needs of the individual patients are known to physicians and public relief officers have no need for any cumbersome machinery.

It is to be noted that the action of the American Medical Association did not contemplate the operation of any plans, except by local constituent societies of the American Medical Association, and that in so doing medical societies must be guided by the Ten Fundamental Principles adopted in June, 1934.

All proposed plans of county societies should be submitted to officers and appropriate committees of state medical societies. Before considering any program, it would also seem advisable to confer with the Bureau of Medical Economics of the American Medical Association which has the greatest opportunity to study the needs for and varying successes of the existing experiments.

Great responsibility rests upon state and local medical organizations and upon Delegates, who entered into the consideration and adoption of these reports, to see that the action of the House of Delegates be not construed as approving or encouraging the establishment of local sickness insurance units embracing the objectionable features against which the profession, as a national body, is making such a determined and effective fight.

Signed:

Committee on Legislative Activities  
of the American Medical Association.

## ANNOUNCEMENT

Plans for the 1936 Annual Meeting of the State Medical Association are under way, the Committee on General Arrangements meeting in Enid, July 7th, with the local committee, to decide on various phases of the program. Guest speakers have been selected and we are in correspondence with them, trying to make the program of the 1936 meeting more attractive than usual.

### *Editorial Notes—Personal and General*

DR. V. H. MUSICK, Oklahoma City, took a course in Gastro-enterology at St. Luke's Hospital, Chicago, in July.

DR. G. C. CROSTON, Sapulpa, suffered a nervous breakdown while in Ft. Wayne, Indiana, and was taken to a Chicago hospital. The doctor and his wife were making a tour of the northern and eastern states when he was taken ill. Word comes from Sapulpa that he has returned to his home and is reported as greatly improved in health.

DR. D. LONG, Duncan, has been appointed health superintendent of Stephens County.

DR. J. E. JONES, Hollis, has been appointed health superintendent of Harmon County.

DR. KATHERINE BRYDIA has been appointed health superintendent of Pontotoc County.

DR. R. M. SWEENEY, Sapulpa, is reported seriously ill following a major operation.

DR. and MRS. MAYER NEWHAUSER, Muskogee, have returned from a trip through Canada and the east.

DR. W. F. GRIFFIN, Watonga, recently convicted on a narcotic charge, was granted a full pardon by Governor Marland.

DR. CLIFFORD M. BASSETT, Cushing, is in Vienna where he will study special branches of surgery at the University of Vienna for the next three months.

DR. F. P. BAKER, Talihina, has been elected president of the Southeastern Oklahoma Medical Association at their recent meeting held in Durant.

DR. G. W. DIGGS, Wetumka, who has been ill for the past several weeks, is reported improving.

DR. O. O. DAWSON and family, Purcell, are vacationing in Minnesota.

DR. and MRS. G. A. KILPATRICK and son John, Henryetta, are visiting in Iowa and Minnesota. Dr. Kilpatrick will attend the Mayo Clinic for special study.

DR. M. M. CARMICHAEL, formerly of Osage, is now located in Jennings where he will continue his practice in Obstetrics and Pediatrics.

THE STANDARDIZATION COMMITTEE, appointed by Governor Marland is as follows: Drs. M. J. Searle, Tulsa; Earl D. McBride, Oklahoma



City; W. P. Fite, Muskogee; J. F. Park, McAlester; W. M. Browning, Waurika. This committee will pass on hospitals and convalescent homes in the State qualified to care for crippled children.

DR. GEO. N. BILBY, former state health commissioner, will resume his private practice August 1st at Alva.

DR. A. M. COOTER, Miami, is spending the summer at Estes Park, Colorado.

DR. GENERAL PINNELL, Miami, is visiting in California and incidentally attending the Exposition at San Diego.

DR. JOHN GEARLING, formerly of Michigan, has located at Picher, and is on the staff of the American Hospital.

DR. M. M. DeARMAN, Miami, is vacationing in Texas.

DR. and MRS. J. C. JACOBS, Miami, are sight-seeing in Colorado.

DR. W. G. CHESNUT, Galena, Kansas, has recently located in Miami and is associated with the Miami Clinic.

DRS. C. M. GRAY and J. C. JACOBS, Miami, announce the opening of a joint office in the First National Bank Building.

DR. P. J. CUNNINGHAM, Afton, was appointed County Physician of Ottawa County and will take up his residence in Miami about the first of September.

### *News of the County Medical Societies*

DR. W. B. SMITH, Miami, entertained the Ottawa County Medical Society with a buffet luncheon at the Shamrock Cafe, Miami, at their last meeting, June 28th.

OTTAWA COUNTY MEDICAL SOCIETY will not have meetings during the summer months; their next meeting will be the third Thursday in September.

### **The Nature of the Preceding Infection in Acute Glomerulonephritis in Two New York Hospitals and Four Southern Hospitals**

David Seegal, Beatrice Carrier Seegal and John D. Lyttle, New York, (Journal A. M. A., July 6, 1935), compared the case histories of 216 cases of acute glomerulonephritis at the Presbyterian and Babies hospitals in New York City with 163 case histories at the John Sealy Hospital, Galveston, Texas; the Touro Infirmary, New Orleans, and the Baylor and Parkland hospitals, Dallas, Texas. In the years studied there were approximately 35,000 admissions to the medical wards in the two groups of hospitals. The medical admission rate for acute glomerulonephritis was 0.62 per cent in the northern hospitals and 0.47 per cent in the southern hospitals. Allowing for a variation in the admission rules at the various hospitals, the case frequency of the disease in the two groups of hospitals is closely parallel. The age groups of the northern and southern cases are similar. About fifty per cent of the cases occurred before the age of ten years, seventy per cent before the age of twenty-one. In both groups of cases the disease is almost twice as frequent in the male as in the female. The type

of infection preceding the bout of acute glomerulonephritis is much the same for the two groups. The form of the infection is that which is usually associated with tissue invasion by the hemolytic streptococcus. Many of the patients in both groups manifest a deep infection such as acute cervical lymphadenitis, peritonsillar abscess, otitis media and acute mastoiditis. Other preceding infections noted were chiefly those due to the pneumococcus and the staphylococcus. The data in a previous paper showed that, although the reported medical admission rate for acute glomerulonephritis was similar in twenty-four hospitals in four latitude regions, the case frequency for two other diseases chiefly of hemolytic streptococcus origin, scarlet fever and rheumatic fever, was less in the South than in the North. The aggregate evidence suggests that, if scarlet fever, rheumatic fever and acute glomerulonephritis are incited by the hemolytic streptococcus, other factors in addition to a common specific bacterium must exist to account for the lack of parallelism between the geographic distribution of the three diseases.

### **DOCTOR JAMES COMER JOHNSTON**

Dr. Johnston, who was born in 1878, died at Albert Pike Hospital, McAlester, July 26, 1935. He graduated in medicine, with class honors, from Baylor University in 1908 and located in the coal fields of Oklahoma; after one year of general work, he became Superintendent of the All Saints' Hospital, McAlester. While Superintendent of this hospital he was also surgeon for the Rock Island Railroad Company and for a few years did some general surgery. During the latter part of the time of his connection with this institution he gave what time he could take from his administrative duties to the study and practice of Roentgenology. In 1919 he severed his connection with the above mentioned institution and opened an office for the practice of his specialty and has been known throughout the State as one of the leading roentgenologists from that time until his death.

Dr. Johnson also has been very active in organized medicine in Oklahoma. He was past president of his County Medical Society and also served as Secretary and has been a member of some of the more important Committees of the State Association from time to time.

In civic matters he has been intensely interested, giving a great deal of time to the Boy Scout work in this area and served in many important capacities. He was twice elected President of the Rotary Club of McAlester; was an active member of the First Presbyterian Church; a member of the local Blue Lodge and Consistory.

Funeral services were conducted from the First Presbyterian Church by Dr. Samuel R. Braden who used as his theme "We come here to remember a man and worship God." His oration was very fitting for a man like Dr. Johnston whom we all knew to be a fine christian character, as well as a most worthy member of the medical profession.

He leaves to mourn his passing many friends besides his immediate family composed of his wife, daughter Muriel, and son James.

# ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

## INTERNAL MEDICINE

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By HUGH JETER, M.D.

**The Present Status of the Problem of "Rheumatism;" a Review of Recent American and English Literature on "Rheumatism" and Arthritis.** By Philip S. Hench, M.D., F.A.C.P., Rochester, Minnesota; Walter Bauer, M.D., F.A.C.P., Boston; Almon A. Fletcher, M.D., Toronto; David Ghrist, M.D., F.A.C.P., Los Angeles; Francis Hall, M.D., F.A.C.P., Boston; and Preston White, M.D., Charlotte, N. C.

This is a resume of Part II, a report prepared at the request of the American Committee for the Control of Rheumatism, and by a sub-committee of the American Committee for the Control of Rheumatism.

### Chronic Arthritis

Chronic arthritis is divided into: 1. Atrophic (infectious, proliferative, rheumatoid) arthritis. 2. Hypertrophic (senescent, degenerative, osteo-) arthritis. 3. Spondylitis.

The question of nomenclature is a subject of considerable debate. "For various reasons, chiefly to avoid the impression that knowledge on etiology is complete, the American Committee for the Control of Rheumatism has approved the terms 'atrophic' and 'hypertrophic' arthritis even though as individuals some of the committee members may be in the habit of using other designations." It is admitted that an etiological classification based on complete proof may eventually replace all others.

### Atrophic Arthritis

Summarizing various reports the sex incidence runs 1.5 to 1.2 in the female to 1 in the male.

Occupation plays no important role. "More patients were of the asthenic than the sthenic or intermediate type, but the disease was not limited to one anthropologic configuration. There was no significant correlation between the physical type and the onset of the disease, which seemed to affect brunettes more often than blondes, contrary to expectation. Loss of weight may begin early in the prodromal stage."

Prodromal symptoms, such as fatigue, nervous irritability, etc., are emphasized by some.

Renal lesions were found to be rare and secondary anemia frequent. Disturbances of metabolic rate may result from rather than be the cause of the disease.

Studies on Pathology; Joints. Brief synopses on the pathology of both types are given by Eaton, indicating that the pathology is characteristic and different in the two types. Other investigators, however, indicate considerable doubt as to the two conditions being two separate pathological entities. Some investigators seem to indicate that they may have a common cause and the individual resistance

as well as other factors may influence the production of one type on the other.

Changes in the bone cartilage, synovia, and focal collections of lymphocytes occur in both types. Subcutaneous nodules occur in ten to twenty-five per cent of the cases of rheumatic fever and in twenty to thirty per cent of the cases of rheumatic arthritis. They are more common in the atrophic type.

Laboratory Data: Blood Counts. These are somewhat inconsistent, but there is a tendency to lymphocytosis, a slight shift to the left in the Shilling's determination, and slight to moderate anemia.

The blood volume of twenty-six patients whose weight was normal was reported by Sparks and Haden to be twelve per cent above the normal average, the increase being entirely due to blood plasma. The chemistry of the blood as presented by Eaton and Cocheu shows a slight tendency to increase in uric acid. No significant changes in calcium or phosphorus.

The sedimentation rate is said to be more rapid in atrophic arthritis than in hypertrophic, but is also increased in many other types of rheumatism. The average rate, according to Forestier, is forty-two mm. at the end of one hour.

Electrocardiographical studies have indicated very little evidence of myocardial involvement in these cases.

The diversity of ideas that the pathogenesis of atrophic arthritis is indicated by the diversity of theories presented, the principal ones of which are: (1) infectious, (2) metabolic, (3) endocrine, and (4) neurogenic. An abundance of investigation has been done and is herein outlined by the advocates of various theories.

### Treatment of Atrophic Arthritis

"A program of treatment based on an acceptance of the infectious theory naturally differs in principle and in some particulars from one based on an adherence to the metabolic or endocrine theory. At the hands of thoughtful specialists, however, these differences are by no means as great as one might suppose, because the deficiencies of each theory are only too well recognized by them and the inadequacy of a program narrowed to fit some favored hypotheses is sometimes too painfully apparent."

Recognition and management of infected foci is to be considered in every case. Tonsils are considered to be the most common, sinus perhaps next, teeth, gall-bladder, bowel, and many other locations are mentioned. This is still a vexing problem and the removal of the foci depends upon the individual case study. Statistics are inadequate.

The time for removal of foci seems to have been proven an important factor. The removal in patients whose arthritis is many months old is rarely if ever followed by improvement in the joints. Mayers insists that patients have been made temporarily worse or even permanently crippled by removal of infected teeth at the wrong time.

Many suggestions as to diet have been made by various authors. Insulin is used by the patient.

Intestinal antiseptics, colonic flushes have been



recommended by various authors. Insulin is used by some.

Vaccines. Cecil and many others favor a trial of vaccine. Results are similar, whether autogenous or stock vaccine, regardless of subcutaneous or intravenous administration, according to Stainsby and Nicholls. Considerable clinical work has been done in this connection, but considerable doubt still remains as to the efficacy of this method. It seems from the reports herein outlined that various workers have, for some reason or other, attained certain perfection in connection with the use of vaccine and thereby have been able to obtain better results than others.

Foreign Protein Therapy. Similar differences of opinion exist as to the value of foreign protein therapy. "Hench reviewed his experience with the administration of about ten thousand injections of typhoid vaccine intravenously to fifteen hundred patients with atrophic arthritis and to a thousand with other diseases. He also made a complete survey of the literature in search for reports of unusual and untoward reactions. The reactions were in general well-borne, and Hench concluded that the beneficial results from protein therapy justify its continued use and further development."

Transfusions. Holbrook treated seventy patients by repeated small transfusions and found it to be of some benefit in subacute and early phases of the infectious type.

Various Medicinal Preparations. "The debatable value of various anti-rheumatics has been recently reviewed, Hanzlik (1929), Young (1930), and Mutch (1931). Bethea cites the use of eighty-eight "anti-rheumatic" drugs, ascribing worth to only a few."

"The prolonged or careless use of cinchophen is felt to be dangerous by Dill."

Rest, activity, and physical therapy have become increasingly recognized.

Roentgen-Ray treatments seem to have a beneficial result from the influence on the vegetative nervous system.

Fever therapy is the newest form and several reports are made, but here again the lack of uniformity of results reported is outstanding. Diathermy and many other types of heat therapy are reported.

Climate and Clothing. These appear to play a more important role in the prevention than in the cure of arthritis. "—apparently has not affected any of a tribe of five thousand Indians of the Tucson Desert, Holbrook believes the advantage of Arizona's climate is established. Factors of diet, foci, and so forth, were considered: there seemed to be only one variable factor—the climate. Of one thousand consecutive cases among whites seen by Holbrook, in only one case was the patient a resident of Tucson. Only two local cases were found in the practice of one hundred and twenty-two physicians in that locality."

Synovectomy has given relief in some cases, according to Painter and Berstein.

Sympathectomy. Favorable results in selected cases were reported by Rowntree and Adson. Various other surgical procedures of less specific nature have been used in selected cases.

Remissions; Usual and Unusual. "The course of atrophic arthritis is characterized by exacerbations and remissions. Remissions, unfortunately, too often temporary, are induced by many types of treatment as these pages indicate, but the true value of any treatment must take into account natural remissions."

Prognosis and Results of Treatment. "Many patients, indeed many physicians, have the im-

pression that "nothing can be done for atrophic arthritis." This pessimistic point of view is wholly unjustified, as statistics show. The foregoing pages indicate that success rarely follows the institution of one simple form of treatment. The disease does not rapidly fade as the result of one therapeutic tour de force. The patient must be taught the importance of the multiple aspects of his disease and its treatment. He must appreciate that long period of training is necessary. But he can generally be assured that wisely conducted treatment, based on a composite program comprehensively applied, leads to success (Minot).

### Hypertrophic Arthritis

This condition is a disease entity separate from the roentgenographic pattern also seen in certain stages of traumatic, gouty, hemophilic, gonorrheal, or other types of arthritis, including late stages of atrophic arthritis.

Symptoms and Course. Painter includes lassitude, headache, sluggishness of intestinal activity, frequency of micturition, digestive disturbances, nervousness, dizziness, tingling of the fingers, and other "menopausal symptoms." A certain per cent exhibited Heberden's nodes. The spinal column, knees, and hips are frequently attacked. Lipkin reports only half as many of this type as of the atrophic form. In Eaton's series about twice as many women as men were affected.

Roentgenographic pictures are of considerable aid in diagnosis.

The pathological changes are principally cartilage degeneration and osteophyte production and destruction with eburnation of the subchondral bone. Subcutaneous fibrous nodes are not to be expected.

Laboratory findings are less significant than in the atrophic type. Slight anemia is to be expected. The sedimentation rate is usually normal. Blood volume was somewhat below the normal in the cases reported by Sparks and Haden, and blood chemistry examinations have shown no significant changes.

Etiology and Pathogenesis. Opinions as to the cause are classified as follows: (1) infection, (2) degenerative process of age, (3) trauma, (4) a metabolic disturbance, (5) an endocrine disturbance, and (6) circulatory disturbances associated with arterio-sclerosis or other causes. Many interesting theories are presented, but "The exact cause of this hypertrophic arthritis is obviously not known, but it is predicated largely on age, incited or aggravated by a variety of traumas, and perhaps is secondarily influenced by infection."

Treatment. "Many believe, as does J. L. Miller, that the most important part of treatment is to explain to the patient the difference in the prognosis of the disease he actually has from that he thinks he has, and that hypertrophic arthritis (unlike atrophic arthritis which the patient fears) is essentially not an ankylosing, severely crippling, progressive disease. This done, many patients will ask for no other treatment, but will bear their difficulties philosophically."

Removal of foci is believed to be of no real value.

When obesity is present, a weight-reduction diet is generally advocated.

Vaccines are used by several.

Endocrine therapy, fever therapy, or roentgenotherapy may be advisable in some cases.

### Spondylitis

"Backache, particularly low back pain, may arise from a number of causes of which arthritis is the most common." Next to arthritis, painful backs

are due to mechanically defective backs, such as found in a woman who for years feels comfortable in bed but develops a progressive backache during the day. Roentgenograms do not always reveal the cause of back pain because the disease is not sufficiently advanced to produce a shadow.

Several types of spondylitis are described, some are of the atrophic type, others hypertrophic.

Etiology. The same theories apply here as in other types of arthritis.

Treatment is the same as described for atrophic or hypertrophic arthritis, with braces and corsets as necessary.

#### **Blood From the Dead for Transfusions. Editorial, Annals of Internal Medicine, Volume 8, April, 1935, No. 10.**

Professor Sergius Judin, chief surgeon of the Sklifasovski Emergency Hospital in Moscow, has studied the results from transfusions, using cadaver blood, has gained the approval of the Surgical Congress to legalize the procedure, and has very extensive records available at the hospital, covering four hundred transfusions of citrated blood from cadavers.

He concludes (Judin, Sergius: *La transfusion du sang de cadavre a l'homme*, Paris, 1933) that there are many advantages of the method. The blood is carefully typed, cultured, and tested, and found to be free from organic disease and there are fewer unfavorable reactions than from the supply of blood from living donors. The cost is less.

Such blood may be stored and can be transported by airplane or otherwise under proper conditions to any distant point and in any quantity.

### **EYE, EAR, NOSE AND THROAT**

Edited by Marvin D. Henley, M.D.  
911 Medical Arts Building, Tulsa

#### **Trachoma—Recent Advances and the Principles of Prophylaxis. A. F. MacCallan, C.B.E., London. British Journal of Ophthalmology, May, 1935.**

This is a report by the President of the International Organization against Trachoma, read on April 3, 1935, at the Annual Meeting of the organization in London on the invitation of the Ophthalmological Society of the United Kingdom. It is so packed with facts that one wonders how to proceed with the abstracting of it. The author defines trachoma as a specific contagious disease of the conjunctiva characterized by the new formation of lymphoid tissue which spreads to the cornea; it is followed by cicatricial changes in the affected tissues, and is chronic in nature. The etiology is still unknown. It is not due to bacteria, and the possibility of its being a virus disease is discussed. Cellular inclusions, which were first observed by Prowaczek and Halberstaedter in the island of Java in 1907, in a case of trachoma, and their significance in trachoma according to the different views of several leading authorities are debated. If the case is one of doubtful trachoma the presence or absence of inclusion bodies is not of diagnostic consequence.

In southern Palestine, Egypt, Algeria, Morocco, Tunisia, Arabia, Persia and Iraq there is an acute inflammation of the conjunctiva caused by bacterial organisms, which either precedes infection by trachoma or is grafted on to an already existing trachomatous conjunctivitis. This conjunctivitis with its subsequent corneal ulcerations is blamed for the high incidence of blindness in the above

mentioned countries. May, June and July are the months during which this epidemic reaches its peak. Some of the contributing factors mentioned are: overcrowding in the villages, terrific dust storms, absence of sanitation permitting the breeding of innumerable flies, and the shortage of water. Family life is a ready means of transmission of trachoma in regions where it is prevalent. Ireland is cited as an instance of a country where the disease is spread by means of contact in boarding schools. Rugby football and wrestling are the two sports blamed by the author for transmitting the disease in England. He says that trachoma is not necessarily a devastating disease and points out that in some parts of northern India trachoma is practically universal, but progresses to a quiescent stage which produces little disability. The Annual Report of the Public Health Commissioner with the Government of India shows that soldiers recruited for the Indian army from these parts serve efficiently throughout their colour service and have not proved a danger to the British troops brigaded with them.

The objects of the International Organization Against Trachoma are enumerated. In the opinion of the author the most important function is the arrangement of periodical scientific meetings where the various problems connected with trachoma may be discussed. Prophylaxis of the individual, the family, the school, the national and the international case is outlined.

#### **Infections of the Neck. Fred Z. Havens, M.D., Rochester, Minn. Archives of Otolaryngology, May, 1935.**

This article has to do only with the deeper infections of the neck which the author divides into five separate groups as follows: 1. Acute suppurative conditions in the neck secondary to infections elsewhere. Many of these originate in some infection about the mouth, although they may come from infections about the scalp or face and occasionally from more distant points. They may develop by metastasis or by direct extension. 2. This type is known as a woody or ligneous phlegmon, a condition which is probably secondary to infection elsewhere and in which there is marked induration but in which suppuration never occurs. 3. Infections due to certain specific causes, and in this group are tuberculosis, syphilis, actinomycosis, blastomycosis and a rare condition, tularemia. 4. This group consists of infected cysts and infected tumors of various kinds, such as cystic hygroma, lymphangioma and degenerated lymph nodes. 5. This group includes thyroiditis, which may be of the acute suppurative or non-suppurative type. Both types are rather rare, and the non-suppurative type often is not suspected until it is encountered surgically.

One hundred twenty-five unselected cases of suppurative processes of the neck were studied of which there were one hundred three cases of acute suppurative conditions, eighteen of broken down tuberculosis lymph nodes, two of infected bronchial cysts and also two of Bezold abscess. The average time intervening between the onset and the drainage was 22.4 days. Complications encountered were repocketing of the abscess, erysipelas, probable actinomycosis, pharyngeal abscess and a slough into the carotid artery. Thrombosis of the veins of the neck or burrowing into the mediastinum did not occur. In the one hundred three acute suppurative conditions only one death occurred and this case presented evidence of jugular and cavernous sinus thrombosis when he first came under observation.

At this clinic these infections are handled very



conservatively as regards treatment. The abscess is allowed to localize before surgical intervention. When the abscess is located so deep that one cannot tell whether fluctuation is present or not, then you must be guided by the clinical picture the patient presents. The typical clinical course is described and the period noted for the proper surgical treatment, i. e. drainage. The method of draining is described and the drains used. The author does not believe that the pus burrows along the fascial planes as frequently as the anatomist would have one believe. He thinks the results obtained (only one death in one hundred three cases) justify the means used. In comparison he mentions the twenty-four cases treated by Beck by surgical exposure in which one death occurred.

A discussion of acute retropharyngeal abscess, Ludwig's angina, abscess in the root of the tongue, woody phlegmon, tuberculous cervical adenitis, tuberculous retropharyngeal abscess, tuberculous thyroiditis, syphilitic cervical adenitis, actinomycosis, blastomycotic cervical adenitis, acute infection in a branchial cyst, cysts of the thyroglossal duct and congenital cystic hygroma is given.

**Irradiation Therapy of Malignant Tumors of the Oral Cavity, Eye, Ear, Nose and Throat. Charles L. Martin, M.D., Dallas. *Annals of Otology, Rhinology and Laryngology*, June, 1935.**

Dr. Martin enumerates the following principles in the field of irradiation therapy: 1. A total of three to twelve minimum erythema doses of irradiation is needed for the complete extermination of the various grades of epidermoid carcinoma. 2. Recovery is more rapid and the surrounding tissues show a quicker return to normal when the treatment is administered over a prolonged period (usually seven to twenty-one days, at present). 3. An attempt should always be made to produce a cure with the first series of treatments, since the second attempt is never so effective. 4. Short wave lengths produced with heavy filtration lessen the injury to surrounding normal tissues, but this protection is not essential in the treatment of superficial lesions. 5. Infections and other sources of irritation definitely retard healing after irradiation.

A short historical review is given of the development of the different technics, with France being given the credit for the most important advance in deep therapy by such men as Regaud, Ferraux and Coutard.

The experiences of the author with cancer of the lip have been very satisfactory. If the lesion is not over one inch in diameter he uses the superficial x-ray technic because the cosmetic effect is much better after healing. On alternate days a treatment is given until six to twelve erythema doses are administered depending upon the thickness of the tumor. It is usually six to eight weeks before healing is complete after these treatments have been carried out. The weak radium needle technic is used if they are deeply indurated or extend into the cheek at the corner of the mouth.

For the past four years the author has been using what he terms a weak radium needle technic on tumors involving the cheeks, alveolar margins, anterior tongue and floor of the mouth. They are placed beneath the tumor bed and beyond the growing edges about one cm. apart. They are sutured in place and a radiograph taken for studying the needle pattern so that this pattern may be changed if necessary. The treatment is continued usually for about seven days with particular attention being paid to the hygiene of the mouth.

The healing is usually complete in about two months.

In treatment of cancer of the eyelids the main problem is the protection of the normal structures of the eye. This is accomplished by the use of a lead shield under the cocaine lids. The superficial x-ray technic is used. Radiation in the treatment of primary intra-ocular tumors is not advocated. As a post-operative procedure the Coutard method is suggested.

Cancer of the pharynx and larynx is discussed. Between the years of 1920 and 1926 Coutard treated 212 malignant tumors of the pharynx and larynx and reported twenty per cent of this group symptom free for a period of five years. Lenz, Coakley and Stout reported thirty-one cases of cancer of the pharynx and larynx with approximately forty-five per cent clinically well for a period varying from nine months to twenty-four months. Martin and McNattin reported 140 cases with twenty-nine per cent being free of disease for periods varying from one and three-quarters to two and one-half years. The technic in the above groups of cases is given as well as that of Merritt of Washington, D. C. The author believes that very gratifying results may be obtained by a competent radiologist who is very careful and not too conservative.

Cervical metastases is discussed from the viewpoint of the surgeon and the radiologist.

**Cysts and Retention Abscesses of the Nasopharynx. A Report of Eighty-eight Cases. B. M. Kully, Omaha, Nebraska. *The Journal of Laryngology and Otology*, May 1935.**

The author says that strictly speaking the so-called retention abscess of the nasopharynx is not an abscess. It represents an inflammatory closure of the mouth of an adenoid recess or of the pharyngeal bursa with retention of secretion, bacteria, cells, and other inflammatory detritus. As the cavity dilates, owing to the accumulation of secretion, it partakes of the nature of a cyst. The contents appear to be grossly purulent, but, as first noted by von Troeltsch in 1859, on microscopic section there may be a few polymorphonuclear cells and a definite cyst wall. This condition should be described as an infected retention cyst. Sixty-two of the eighty-eight cases were of this type.

It was not possible to give an incidence of occurrence in the series here reported. He does state, however, that of 400 consecutive patients examined during 1932, twenty-two cysts were found, giving an incidence of five plus per cent. In the series here reported the age limits were from six to eighty-two years. The literature shows a reported case of a cyst in a child two and a half years old. Of the eighty-eight cases reported, fifty were in patients between the ages of eighteen and thirty-five. Involution for the adenoid and acute adenoid infection, according to the author, occur most frequently during this period of life.

The pathology is discussed under the heads of Infected Retention Cysts of the Adenoid Recesses, Cysts of the Mucous Glands, Retention Cysts of the Pharyngeal Bursa, Degeneration Cysts and Branchiogenic Cysts. Under the heading of Pseudo Cysts, our attention is called to the fact that meningoceles or encephaloceles transmitted through a patent craniopharyngeal canal may be erroneously diagnosed. The symptoms noted in the order of their frequency were postnasal discharge, enlargement and tenderness of the posterior cervical glands, occipital headaches, earache and persistent fever of several months' duration. The point

is stressed for a thorough examination of the nasopharynx in cases of persistent temperature. A striking case is related of an eighteen-year old boy with albuminuria, hyaline and granular casts of a year and a half duration. Shortly after removing an infected cyst, the urinary findings became negative and have remained so for two years.

The diagnosis is made by direct inspection of the nasopharynx and palpation with the probe under direct vision. He does not approve of the indirect inspection of the nasopharynx with the postnasal mirror and gives two reasons why he does not approve. The Holmes nasopharyngoscope and the Hays pharyngoscope are discussed relative to their merits for this examination. The author prefers the direct speculum of Yankauer for examination, diagnosis and operation. The treatment is surgical removal. Fifty-six references are given. Twenty-one illustrations accompany the discussion.

### ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.  
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**Syndrome de Volkmann Traite par Arteriectomie. Etude Histologique de L'Artere Humerale Oblitee. (Volkmann's Syndrome Treated by Arterectomy.)** P. Mathieu, P. Padovani, R. Letulle, and P. Normand. *Presse Med.*, XLII, 1819, 1934.

The authors report the case of a child five and one-half years old, who was treated for a supracondylar fracture of the humerus by flexion and application of a plaster-of-Paris cast. Although there was evidence of swelling within a few days, so that the cast had to be removed, the flexion deformity of the fingers did not occur until about five weeks after the accident.

At the operation performed some three and one-half months later, there was found thrombosis of the brachial artery for a distance of two centimeters just above its bifurcation. This portion of the artery was resected, with almost immediate improvement in the degree of contracture of the muscles and warmth of the skin. The patient was subsequently treated by traction in extension. Several months later it was noted that the hand was warm, the wrist and fingers were extended, but that the semipronation of the forearm still persisted.

Histological examination of the section of the artery removed showed a typical thrombosis of the artery, with attempts at recanalization.

The authors are of the opinion that the condition in this case resulted not from a superaponeurotic hematoma, but from an injury to the brachial artery, with a subsequent thrombosis. The effect of this thrombosis of the artery was first necrobiosis of the flexor muscle on the anterior surface, due to interference with circulation, and a sympathetic vasoconstriction with muscle contracture, due to hypertonia.

The authors, therefore, advise early operation in cases of Volkmann's ischaemia, with exposure of the brachial artery in the antecubital fossa. If the artery is obviously pulsating, a simple arterial sympathectomy should be performed. If there appears to be thrombosis of the artery, resection of that portion is advised.

**Syphilis of the Clavicle: Report of Five Cases.** H. Earle Conwell. *Southern Medical Journal*, XXVIII, 11. Jan. 1935.

These cases presented varying symptoms and roentgenographic appearances. The latter often

seemed worse than the complaints of the patients would lead one to suspect. Pain was the usual symptom; this was often much worse at night, preventing sleep. Tumefaction was present. Two of the five cases showed bilateral involvement. A history of syphilis was obtained in only forty per cent of the cases. All five cases responded to antiluetic therapy. In such cases the differential diagnosis is made from malignancy, tuberculosis, chronic osteomyelitis and Paget's disease. Many of these cases are operated upon unnecessarily.

**Myosite Ossifiante Progressive (Progressive Ossifying Myositis.)** Felix Masselot, A. Jaubert de Beaujeu, and Ed. Bloch. *Press Med.* XLII, 1823, 1934.

The authors report a case of progressive ossifying myositis in a child two and one-half years old. Although the condition apparently came on shortly after an acute intestinal infection, they are of the opinion that the infection was only of casual significance. The ossifying masses in each case occurred after trauma and were preceded by typical hematoma formations. The patient also presented a number of congenital anomalies, such as microdactylia, hallux valgus, hypospadias etc.

Rocher believed that hematomata arise primarily from a panarteritis in which trauma leads to rupture of the artery. The authors are of the opinion that this condition is to be related primarily to some error in mesenchymal development.

Treatment is without avail, although some authors advise the use of x-ray, hot air, and diathermy. Surgery is contra-indicated unless it is for the palliative purpose of removing an obstruction to motion.

### DERMATOLOGY, RADIUM AND X-RAY THERAPY

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**The Treatment of Cancer of the Pharynx, Tonsil and Extrinsic Larynx by Divided Doses of External Radiation.** Hayes E. Martin, M.D., F.A.C.S., and Robert E. McNattin, M.D. *American Journal Roentgenology and Radium Therapy*, December, 1934. Vol. XXXII, No. 6, 717-729.

This article is very valuable to the medical world as it deals with cancer at the site mentioned in the subject, as determined by authors who have done a great deal of scientific work at an institution that is internationally recognized; that is, Memorial Hospital in New York City. Coutard first called attention to the divided dose method of treatment of x-ray therapy in 1920. By such a method the total dose employed was much larger than that given by any other method of external radiation with correspondingly less damage to the skin. There is a rather intense biological effect such as blistering of the skin and mucous membrane of the pharynx, which is deliberately planned. The method allows a complete and satisfactory healing of the part without any sequela of any consequence. The authors believe that considerable variation in voltage, milliamperage, distance, filter, etc., can be made as long as adequate tissue dosage is delivered with about equally good results, provided that protracted divided doses are given. Malignancy of the following sites are those elected for radiation therapy by this method: Tonsils, soft palate, pharyngeal wallis, nasal pharynx,



extrinsic larynx, base of the tongue, intrinsic larynx, anterior floor of the mouth. The sources of radiation used are as follows: (1) Roentgen rays at 200 kv., 50 to 60 cm. distance; (2) roentgen rays 700 kv., 60 cm. distance, and last (3) radium element pack. The majority of these cases were treated by roentgen rays utilizing 200 kv. The filter was 0.5 mm. cu. plus 2.5 mm. al. The authors were unable to state definitely that the results from the 700 kv. machine were in any way superior to the 200 kv. machine up to the time of the writing of this article. As for skin portals two positions are commonly given, one on each side of the neck or of the involved anatomical site, thereby cross firing. The size of the portal varies from 7 to 15 cm., but more commonly is from 7 to 10 cm., thereby allowing a larger dose with less reaction locally and to the patient generally. In certain places four portals are used, such as the nasal pharynx region and the floor of the mouth. Each site is treated every other day without interruption, except Sundays, until a total of twenty treatments are given and a total of 3,500 to 4,000 r to each site. At the end of this treatment there is a decided skin reaction as noted by an intense erythema, vesiculation and some serous oozing. On the mucous membrane there is a grayish sloughing. This condition clears up satisfactorily within some ten to twenty-one days. This article covers 140 cases as described and a large percentage of them are cases which are advanced clinically and many in which palliation alone is the object. A very comprehensive table has been prepared which must be observed to appreciate the results obtained during the two years it was compiled, and also to note the different results as pertaining to the anatomical locations involved. It is also interesting to note that there is not as much clinical response dependent on the histological type or grade of the tumor as is ordinarily expected, although in a general way the type that is more radiosensitive responded in the greater proportion than those in which the cells were radioresistant. The outstanding value of this work is that a much larger dose of radiation therapy can be administered to the lesions at these sites than has previously been given by the short, massive method; therefore, a dose delivered to the malignant lesion is much greater and the chances for obtaining better results are enhanced considerably.

**Radium Dosage and Technique in Benign Lesions of the Skin.** Howard Morrow, M.D., and Laurence R. Taussig, M.D. *American Journal Roentgenology and Radium Therapy*, Vol. XXXII, No. 6, December, 1934, 735-739.

When radium was first used in dermatological conditions it was thought that it was a panacea for most skin conditions. Since that time experience and unpleasant sequelae have shown that this is not the case. The authors outline the conditions which they consider are responsive to radium therapy. Vascular nevi are first considered. Nevus flammeus, or port wine mark, is regarded as not being amenable to radium therapy as the sequelae are so great that they outweigh the good effects. Nevus vasculosus, or strawberry mark, is a condition that is very responsive to the effects of radium when given in proper doses. The technique of treating is given. Cavemous hemangiomas are also very responsive to the effect of radiation. The authors also give the technique of treating these lesions and state that unpleasant sequelae can be avoided by conservative treatment. Fleshy nevi do not respond well to radium treatment. Keloids are discussed and it is pointed out that they respond fairly well to radium, but also equally good results can be obtained from the use of x-ray. Radium

treatment technique is given. Telangiectasia is rather commonly seen in keloids and may remain as the resulting scar. It is pointed out that verrucae of all types are frequently treated with radiation but the essayists believe that it could be confined to certain ones, particularly plantar warts. Radium and roentgen rays are equally as efficient in treating plantar warts, and the latter saves time. Synovial cysts are sometimes amenable to the effects of radium or x-ray. They are treated following the puncturing and emptying of these lesions. Epulis is another condition that can be treated with radiation, particularly when the lesions are between or near the teeth. The use of electrothermic surgical methods is advised, in other locations. When used on those lesions in the mouth it may cause the loss of one or both teeth.

**Radium Dosage and Technique in Carcinoma of the Breast.** Grantley W. Taylor, M.D., F.A.C.S. *American Journal Roentgenology and Radium Therapy*, Vol. XXXII, No. 6, December, 1934, 730-734.

The essayist gives credit to Keynes of London on his work in connection with the use of platinum radium needles for stimulating an interest in carrying out work of this nature. He started his work in October, 1930, at the Pondville Hospital in Boston, and a few cases at the Palmer Memorial Hospital. In selecting cases of breast malignancy for radiation, only inoperable and recurrent cases were used. In the majority of these cases the primary growth had been movable on the chest wall but all so extensive as to involve most of the breast, occasionally having nodules of skin involvement or ulceration. Axillary metastases had been present in most cases, and in many supraclavicular node involvement. In describing the technique it was shown that 2 or 3 mg. of radium were used in platinum needles with 0.5 mm. filtration. The 2 mg. needles are 3.2 cm. long, and the 3 mg. needles 4.8 cm. long. The breast and axillae are prepared as for surgery. Anesthesia was by nitrous oxide and oxygen. Cutaneous punctures were made by a No. 11 Bard-Parker blade and the radium needles slipped through the punctures that were made. Considerable detail is devoted to the manner in which the needles are inserted in relation to the malignant tissue and the surrounding structures. Keynes recommended that the needles be placed about 1.5 cm. apart but pictures in his article did not altogether agree with this. Taylor states that he did not place his needles quite so close together as Keynes. In most breasts about a dozen needles are utilized. The axilla is also irradiated by these needles and considerable detail is given to the manner in which the needles are left in from a few to ten days or more, but on an average of about one week. The dose per needle ranges from 300 mg.-hr. for the 2 mg. needles to about 500 mg.-hr. for the 3 mg. needles, or longer in some instances, the total dose varying from 5,000 to 20,000 mg.-hr., depending on the amount of radium and the duration of its application. A greater number of the patients treated with radium also received intensive deep x-ray therapy in about half of which the roentgen treatment preceded the radium treatment. In Keynes' article it was insisted that a biopsy be done in all cases, but later he warned against the possibility of carcinoma arising in the wound due to implantation of cells, and then contented himself with a clinical diagnosis. Taylor obtained biopsies in his series when possible, but was reluctant to cut into deeply placed lesions. He does not advocate biopsy in these cases as they are advanced cases for palliation only and the diagnosis is obvious. In the event

radium treatment of breast cancer is to be undertaken for operable cases then it would be necessary for a biopsy to be obtained in order to carry on intelligent procedure and to obtain five-year statistics. In reporting the result it was pointed out that it was too premature to have any final statement in regard to the outcome, as the time does not allow. Of the forty cases studied, nineteen are dead. Two of these had favorable regression prior to death, living five months and two years, respectively. However, one was gumma rather than carcinoma. Of the twenty remaining cases, eight were treated within a six months' period and are too recent to take into account. Of the twelve remaining, one patient had a radical breast amputation six months after radiation; therefore, only eleven cases are presented and had evidence of uncontrolled metastatic lesions, nine in the axillary region and supraclavicular areas and four in the skeletal system. As for the effects of the primary lesion in the breast, thirty-seven cases showed regression and apparently a permanent cure in twenty-four of them locally. Only three cases showed no regression of the local process. In fourteen cases regression was demonstrated in axillary metastases, but this regression was not so complete and lasting as in the primary lesion. In five cases regression of supraclavicular nodes was observed. Taylor sums his work up as follows: (1) Radium implantation causes regression of the primary tumor of carcinoma of the breast in most instances (2) Radium implantation causes regression of axillary metastases in many cases, and of supraclavicular metastases in some cases. (3) Regressions appear to arrest the disease rather than eradicate it in most instances (4) Radium implantation is a useful palliative treatment for inoperable carcinoma of the breast when it is used as part of a general program of irradiation. (5) We do not feel that there is justification for treating operable cases with radium unless operation is definitely contra-indicated by the condition of the patient.

**Primary Rectal Carcinoma Under Radiation Treatment. Harry H. Bowing, M.D., and Robert E. Fricke, M.D. American Journal Roentgenology and Radium Therapy, Vol. XXXII, No. 5, November, 1934, 635-645.**

This essay represents a statistical review of five hundred cases observed at the Mayo Clinic during a period from 1915 to 1931. The authors give a very complete and detailed group of tables considering these cases from every angle. A personal perusal of this article is necessary to appreciate the time and care devoted to working out the tables in this large number of interesting cases. However, the valuable portion of it is summed up in the conclusions which are given verbatim:

"1. Surgical intervention of cases of carcinoma of the rectum, anus, and rectosigmoid is most important and should be the first considerations.

"2. Colostomy is a necessity in some cases. It should always be considered as a means of establishing a permanent or temporary opening. It is possible to apply adequate radiation treatment in selected cases without colostomy.

"3. An attempt should be made to estimate the grade of malignancy in each case and then decide on a plan of attack.

"4. Therapeutic radiology, especially radium therapy, has a distinct place in the treatment of carcinoma of the rectum, anus, and rectosigmoid.

"5. Pre-operative radium therapy should receive special consideration and, when employed, should be followed by a period sufficiently long, probably

eight to twelve weeks, before surgical intervention is attempted.

"6. Radium therapy as a palliative procedure is of value, and inoperable and recurring lesions should be given at least one well-planned treatment. The degree of palliation naturally varies, but nearly all of the patients will be benefitted somewhat.

"7. Radium therapy as a postoperative measure has a limited field of usefulness; all lesions of a high grade of malignancy at least should be treated.

"8. Roentgen therapy is of value, and with the increased voltage of the present day installations, should become of greater value, especially in cases in which lesions are of the higher grade of malignancy.

"9. Since the rectal polyp may undergo carcinomatous degeneration, adequate treatment or removal of these lesions may be classed as a procedure to prevent the occurrence of carcinoma of the rectum.

"10. Owing to the advanced state of malignant involvement of the bowel in the majority of the cases today as well as the age and general physical condition of the patients, and so forth, the combined efforts of surgery, therapeutic radiology, and medical treatment should greatly reduce the surgical mortality rate and enhance the initial and late result."

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
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**Hyperparathyroidism. By Fred W. Rankin, M.D.  
Read before the Kansas City Southwest Clinical Society, October 3, 1934.**

Hyperparathyroidism, a recently recognized clinical entity occurring usually in adults, more often in females than in males, and running a course of years rather than months, is characterized by skeletal changes, renal and gastro-intestinal symptoms, alterations in the metabolism of calcium, and phosphorus associated with hypercalcemia, hypophosphatemia, and hypercalciuria, and in addition, by radiologic signs, chiefly decalcification and cyst formation.

Previous sketchy knowledge of the function and disfunction of the parathyroid glands has been replaced today by accurate information of the clinical course of hyperparathyroidism, its experimental production in animals and the successful cure or arrest of lesions caused by overproduction of parathormone by abnormal parathyroid tissue.

A typical syndrome now recognized as hyperparathyroidism is accurately diagnosed in the majority of instances by standards of criteria which usually revolve around the following: First, a prolonged history of skeletal pain and muscular weakness confining the patient to bed, and frequently associated with one or more fractures; second, definite roentgenological evidence of general bony decalcification involving numerous bones, and frequently the entire skeleton; third, normal or elevated amount of calcium in the blood serum associated with increased excretion of calcium, giving a negative calcium balance; and fourth, normal or decreased phosphorus in the blood serum with excessive excretion of phosphorus resulting in a negative phosphorus balance.

Additional secondary findings such as myotonia,



anemia, loss of weight, gastro-intestinal symptoms such as anorexia, cramping, nausea, vomiting, and not uncommonly polydipsia or polyuria and associated nephrolithiasis are frequently encountered. The muscle weakness and pain are of more than passing importance since they are severe in their manifestations and extend over a long period of time.

With the demineralization of the bony skeleton, there is deformity of the long bones and general wasting and this results in a diminution in the height of the patient.

There is an increased excretion of calcium in the urine as well as a high concentration of serum calcium. The concentration of phosphatase in the blood plasma is elevated.

The typical radiologic evidence is that of generalized osteoporosis, cystic lesions, and deformity. Apparently the most characteristic picture is in the bones of the skull.

Hyperparathyroidism must necessarily be differentiated from multiple myeloma, metastatic bone malignancies, dietary deficiencies, osteomalacia and some types of osteoporosis associated with chronic steatorrhea and Padgett's disease.

The removal of parathyroid adenomas for the symptomatology common to osteitis fibrosa is followed generally by as spectacular recovery as one sees from subtotal thyroidectomy for exophthalmic goiter. Technically, the procedure usually is not difficult, but on the other hand it may be most difficult. The anatomical location of the parathyroid bodies varies a great deal. Adenomas of the parathyroid glands may be multiple. The position of the tumor and its size, the musculature of the neck, and other anatomical factors operate together to make it often very difficult and usually impossible to palpate the tumor in the neck before operation. Great care is necessary in the resection or removal of these parathyroid tumors in order to avoid injury to the recurrent laryngeal nerve.

Usually immediate relief of symptoms follows parathyroidectomy. The calcium returns to normal quickly, but occasionally falls to a subnormal level with evidences of a mild tetany. This is controlled by the administration of parathormone, calcium salts, and irradiated ergosterol. It may sometimes be advisable to do subtotal resection of parathyroid tumors rather than complete removal of the tumors in order to prevent the development of tetany. Pain disappears quickly and promptly and usually there is a definite and early improvement in the general health of the individual. However, there seems to be less effort for the bones to return to normal than one would naturally expect.

The diagnosis of hyperparathyroidism with ankylosing polyarthritis and the removal of parathyroid glands, or the resection of parathyroid glands for ankylosing polyarthritis is a questionable procedure.

LeRoy D. Long, M.D.

#### Carcinoma of Thyroid with Multiple Metastases. By R. H. McClellan. *The American Journal of Surgery*, February, 1935.

The occurrence of malignant neoplasm of the thyroid is of sufficient rarity to call attention to this instance. In large clinics where many thyroids are observed, both clinically and pathologically, it has been stated that the incidence of malignancy is from one to three per cent (Graham and Clute). Some years ago L. B. Wilson said, "Correct early diagnoses of malignant tumors in the thyroid are made probably less frequently than of malignant tumors involving any other organ of the body." While heightened interest has increased the num-

ber of these tumors recognized, doubtless many still are missed. There are several apparent reasons for the difficulty in the proper recognition of malignancy, among which can be mentioned: (1) The difficulty of histopathologic diagnosis, due to the variable picture which results from the peculiar manner in which the thyroid develops. (2) The fact that the thyroid is usually responsive to functional stimuli, resulting normally in a widely varying histological picture. (3) An unsatisfactory terminology often used to hide lack of definiteness.

Graham reviewed a large number of thyroids, and has described a criterion for accurate diagnosis of the more difficult group of malignancies of the thyroid. He demonstrated that the group classified as adenoma, often with modifying terms added, indicating early or suspicious malignancy, can be definitely assigned to the malignant grade where invasion of the blood vessels or capsule can be demonstrated histologically. The absence of such invasion warrants placing the lesion as a benign one. Recently a large series of malignancy of the thyroid was reviewed by Smith, Poole, and Olcott, in which an extensive analysis of the clinicopathology of the disease was given. The classification and terminology presented by them is particularly helpful because of its simplicity and usefulness in prognosis.

Clinical symptoms seldom lead to recognition of malignancy of the thyroid except in those rare instances in which a rapidly growing thyroid tumor with rapid downhill progression of the patient makes the diagnosis of malignancy obvious. In the case presented the patient had had an unsightly, but otherwise harmless and symptomless tumor for twenty years. It has been said that hardness, fixation and rapid growth should make us suspicious of malignancy and that when these are accompanied by hoarseness and interference with breathing and swallowing, the course of the disease is apt to be rapidly fatal. The malignancies of the thyroid studied by Clute were divided by him into three classes: those showing little histological evidence of malignancy, making up about seventy per cent of his total number; those showing adenocarcinoma of papillary or alveolar arrangement, comprising eleven per cent, and small celled carcinoma, making up the remaining nineteen percent, to which this neoplasm, which is reported, belongs. This type of malignancy is by far the most fatal, and is made up of those showing easily recognized clinical symptoms.

The fact that the patient whose case is reported here went twenty years without symptoms and then within a year died of a rapidly metastasizing malignant disease, again forcefully brings to our attention the fact that the early surgical removal of any suspicious nodule in the thyroid gland, together with accurate histopathologic diagnosis, remains our hope for cure of cancer in the thyroid.

LeRoy D. Long, M.D.

The following reports are based upon notes made by G. Cordier at the meeting of the Paris Surgical Society, November 7, 1934, and published in *La Presse Medicale*, November 31, 1934: With References to Osseus Actinomycosis (A propos de l'Actinomycose Osseuse).

This report was made by L. Ombredanne concerning a child of eight and one-half years upon whom three operations had been done for a tumor due to actinomycosis of the axillary area, with metastases to the cervical and the dorsal regions of the spine. In spite of post-operative treatment by iodide there was a new recurrence. The reporter

remarks that tumors due to the involvement of the osseous system by actinomycosis may recur, in spite of surgical exeresis and treatment by iodide.

In connection with the mycoses, L. Chevrier stated that the study of a culture in laboratory in connection with suspected actinomycosis was not of value after the first series, because dissemination in a laboratory is easy and rapid. He does not regard a moderate increase of the eosinophiles as being of any particular value. He states that the increase has no value under four per cent. He regards certain local characteristics as being of value in connection with the diagnosis. In addition to proper surgical management, he emphasizes the necessity of the employment of iodides, a solution of the iodide of sodium, about one per cent, being used locally in addition to the internal administration of the iodide.

#### **Sub-dural Chronic Post-traumatic Hematoma. Operations. Cure. (Hematome sous-dural chronique post-traumatique. Operations. Guérison.)**

This report was made by P. Moulounguet for Swynghedauw and Dereux, of Lille.

In the case reported there was a sub-dural hematoma of the left fronto-parietal region after a free interval of two months, following an injury by the kick of a horse. The diagnosis was strengthened by an abnormal, ovoid shadow in the x-ray negatives. At operation, an opening was made by a trephine, and blood aspirated from the suspected area. This was followed by a bone flap, the opening of the dura mater by crucial incision and the removal of the hematoma. There was recovery in about three weeks.

In discussing the pathogenesis, in connection with the relatively long latent period, attention is directed to the theory that there is a difference in the osmotic pressure of the fluid inside the cyst and that of the surrounding cerebro-spinal fluid. As a result of this difference in osmotic pressure there is a current from the outside to the inside of the cyst by way of the cyst wall, and in that way the cyst, following trauma, and containing blood, gradually becomes larger.

Referring to the value of x-ray examination in connection with the investigations, it is remarked that the radiologic opacity may be attributed to iron pigments in the wall of the cyst.

In the discussion, Petite Dutailis spoke of the value of ventriculography. He also said that it was useful to make some small trephine openings for exploration before undertaking the actual operation, pointing out that a slowly developing cyst due to hematoma might be confused with a glioma.

Wolti discussed the report. He spoke of the usefulness of encephalography. Continuing, he remarked that in general the hematoma arises from a vein that does not bleed at the time the operation is done, and that simple evacuation of the hematoma by way of a small orifice (orifice économique) suffices.

Moulounguet remarks that in the case reported it did not seem that encephalography and ventriculography were of any particular importance for the reason that the history of a traumatism was evident. He remarks that a trephine opening might suffice for exploration, but it might not permit the proper removal of the hematoma.

LeRoy Long, M.D.

made by J. Dor, and published in *La Presse Medicale*, December 1, 1934.

There was a report by Flach, of Bastia, on acute articular rheumatism with peritoneal reaction (rhumatisme articulaire aigu avec réaction peritoneale). In this case the patient was a young man. The syndrome was much like that of acute appendicitis. There was an arrest of intestinal function with a good deal of gas. Operation was considered, but was deferred until the following day. During the night there were pains in the shoulders, knees and back. The next day it was pretty clear that the patient had acute articular rheumatism. The administration of the salicylates gave quick and complete relief. The striking thing about it was that the pain about the abdomen disappeared.

#### **Comment:**

Reports like this emphasize the necessity of careful and deliberate investigation in any case in which the clinical picture of acute appendicitis, or some other acute abdominal condition, is not clear. In the average acute appendicitis the diagnosis is not difficult, and in such a case the surgeon does not have any particular mental reservation in connection with his conclusion. In the case where some other pathology simulates acute appendicitis the clinical picture is almost invariably irregular, and for that reason the surgeon just as invariably has mental reservations in connection with the situation. In such a situation both the welfare of the patient and the reputation of the surgeon would be served by eschewing hasty and ill-considered conclusions.

Vignoli, of Salon, reported a case of volvulus of the gall bladder in a man seventy years of age. The reporter says that an investigation has shown him that the occurrence of this affection is very rare. He believes that the case reported is the forty-first appearing in literature.

In this particular case an operation was done, but the patient did not survive. He says that this unusual type of pathology occurs in old people, that the diagnosis is difficult, and that cholecystectomy is the only treatment.

J. Fus and M. Arnaud reported a case of sub-serous emphysema of the pelvic colon due to a gun shot wound of the rectum (emphyseme sous-sereux du colon pelvien du a une plaie rectale par arme a feu). In this case there were a series of perforations of the small intestines after the patient had been shot in the abdomen by a revolver. It was necessary to do a resection of the small intestines. At the time of the operation it was observed that there was a considerable emphysema of the pelvic mesocolon with some detachment of the visceral peritoneum, with distension of the intestines. An incision of the pelvic mesocolon was followed by the escape of gas under pressure. There was a sub-serous wound of the rectum. A Mikulicz drain was put in contact with the wound. There was a phlegmonous collection in the perineum some days after the operation. It was evacuated on the eleventh day, and when it was evacuated the bullet was found.

LeRoy Long, M.D.

**Routine Treatment of Gonorrhea in Females.** By Bernard Notes. *The American Journal of Obstetrics and Gynecology*, July, 1935. Page 121.

This analysis covers the work of the Gynecological Section, Social Hygiene Clinic of the Health Department of the District of Columbia during the past four years and particularly the work done in the last eighteen months. During this period 2,129

At the Meeting of the Surgical Society of Marseille on October 22 to 29, 1934, there were several interesting case reports. The following abstracts of a few of them are based upon notes



new positive cases of gonorrhea of the female genitalia were admitted for treatment.

"Positive diagnosis was based on smears with gram-negative intracellular diplococci having the morphology of the gonococcus, plus objective clinical signs. While not taken as diagnostic, extracellular gram-negative diplococci were considered as suspicious, and no patient was discharged as recovered who had these suspicious smears. In order to discharge a patient as cured, four consecutive smears negative for both intra- and extracellular gram-negative diplococci obtained at intervals of two weeks with absence of objective clinical signs was required. Thus each patient was observed two months for recurrences.

The basis of treatment in the beginning was drainage and antiseptics. In 1931 antiseptics used in treatment included iodine and lysol, as douches and by topical applications, and of 384 cases admitted, four were discharged, one per cent. In 1932 antiseptics used included iodine, lysol, mercurochrome and silver nitrate (ten per cent) and of 522 patients admitted, eighteen were discharged, 3.4 per cent. In 1933 of 546 cases admitted, forty-eight were discharged, 8.7 per cent."

In August of 1933 the direction of this particular phase of the venereal disease work was changed and a new plan of treatment instituted.

"Treatment on the basis of creation of local reaction and drainage with the omission of antiseptics was begun as follows: (a) all cervixes with cervical glands functioning were cauterized one or more times with the electrocautery at intervals of two or more months in order to cause local reaction and to give better drainage of the active focus; (b) urethral meatus and cervix were treated weekly with applicators saturated with twenty-five per cent silver nitrate (considered a local irritant, not an antiseptic, in this strength) in order to cause local reaction and to favor better drainage; (c) five per cent sodium-bicarbonate douches were taken by the patient at home twice daily, by fountain syringe until the cervix healed and by pressure syringe (bulb type) after the cervix healed; and (d) nightly instillations of one dram of one per cent lactic acid jelly were made by nozzle to the vaginal vault in order to promote the normal bacterial flora and to get rid of secondary invaders which cause desquamative vaginitis."

This treatment depended upon the premise that: "(a) the fountain head focus is in the cervix; (b) the next most important focus is in the urethra (Skene's ducts and paraurethral ducts) which is lined by resistant stratified squamous or transitional epithelium; (c) the vagina, during the reproductive period suffers only transiently; and (d) the upper genital tract tends to relieve itself of infection if relieved of the re-infection and constant drainage from the lower genital tract."

"During the first six months of this period, but twelve patients were discharged; however, a clinical improvement and increase in negative smears were marked. Beginning with February, 1934, sustained results began to be obtained, and 677 cases admitted during the following twelve-month period, 131 were discharged, 19.3 per cent. In other words, in 1931, 1932, and 1933 combined, but 110 were discharged as against 131 for 1934 alone."

"The largest number of cauterizations upon a single patient was five, the smallest one, and the average two. Total number of cauterizations during the eighteen-month period was 786. Some cases which had resisted treatment by antiseptics for as long as four years were cured within one year by creation of local reaction and drainage. No patient who cooperated failed of cure."

The conclusions of the author are as follows:

"1. Antiseptics should be abandoned in the treatment of gonorrhea in females.

"2. Cure lies in a physiologic-pathologic approach and consists mainly of creation of local reaction and drainage."

Comment:

This is a report of a good piece of work in a large city clinic and well demonstrates the advantages of treatment based upon sound pathological premises. It certainly demonstrates the fact that gonorrhea is very seldom a self limited disease of short duration, requiring little active treatment.

Wendell Long, M.D.

### Therapeutics of the Thyroid

J. H. Means, Boston, (Journal A. M. A., July 6, 1935), points out that the treatment of thyroid diseases or disorders resolves itself chiefly into that of excessive function of the gland, insufficient function of the gland, and local mischief caused by the gland. In identifying methods to meet these several indications it will be well to think always in terms of known thyroid physiology, or in those of the anatomic relations of that organ. The sole function of the thyroid, so far as is known, is the manufacture of the hormone thyroxine, but the physiologic actions of the substance are varied and have to do with metabolism, homeostasis, irritability, differentiation and growth. For the purpose of discussion the author considers the clinical pictures, associated with the thyroid under: thyrotoxicosis, myxedema and cretinism, endemic goiter, nodular goiter, malignant goiter, inflammation of the thyroid and anomalies of the thyroid. Of these several groups, the first two include lesions producing gross alteration in thyroid function and, therefore, constitutional manifestations both characteristic and important. The remainder include lesions for the most part of local significance. In contrast to its use in myxedema, in which it is a direct substitute for a hormone that the body needs and cannot make for itself, thyroid may be tried in a variety of nonthyroid disorders for the sake of its drug action. The action wanted may be the calorogenic, the diuretic, the diaphoretic, the effect on other endocrines such as the female gonads, the direct effect on heart muscle, the stimulation of the vegetative nervous system with, for example, increased peristalsis and relief of constipation, or any other that it possesses. The physician, in using the drug, should think of all its actions and give it when he would like to obtain, in his patients, such effects as it may conceivably produce. He should also remember that dried thyroid, U. S. P., is the form of choice, not pure thyroxine or any special pharmaceutical. It may be indicated in hypometabolism without myxedema, obesity, pregnancy and sterility, heart block and nephrosis.

### Rapidly Developing Cataract After Dinitrophenol

W. W. Boardman, San Francisco, (Journal of A. M. A., July 13, 1935), presents six cases of rapidly developing cataract after the use of dinitrophenol in women aged from thirty-six to fifty. He calls attention to the fact that as the occurrence of cataract at this age is extremely rare and the only common factor in these cases has been the use of dinitrophenol, it would certainly seem that until the question of the relationship between the dinitrophenol and the rapidly developing cataracts in young women is settled, the administration of the drug is definitely contra-indicated.

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### Modern Trends in Surgery\*

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Nothing stands still in Nature. Everything is perceptibly or imperceptibly but inevitably undergoing constant change. It was said that medicine stood still for nearly 1500 years, being entirely dominated by precepts of Galen. We know that this is not really so in actual fact; but, nevertheless, the Galenic central humoral concept of disease did almost entirely dominate men's ideas concerning pathology practically up to the time of Virchow. Virchow was the father of cellular pathology and up to a few years ago anyone who seriously assailed Virchow's views would have been considered anathema as far as the nature of disease is concerned. But today we can openly say that Virchow's cellular pathology is moribund if not dead and, strange to say, we are going back to Galen.

These introductory remarks are necessary because they have to do with the subject of this paper which is intended to deal with some of the major modern trends in surgery. Like pathology, the fundamental basis of surgery is changing; the change is insidious but, nevertheless, it is an actuality. We who practice the art of surgery know it and feel it; we may regret it or rejoice at it, according to our philosophy and acumen, but we are powerless to stop or impede the trends which mark the changes. Fifty years ago surgeons thought that their art had then

reached its zenith; later, with the perfection of technique and the dogmatism of Vienna and Berlin, during the decade ending with the onset of the great World War, it was believed that surgery had again reached a zenith; today we think we have arrived at a new zenith; perhaps in twenty-five or fifty years more the principles governing surgery will be as different as those of today are from those of the pre-Listerian era.

I have said that we are going back to Galen. Let me be a little more specific as to what I mean exactly by this.

The guiding principle that actuated Galenic medicine was the philosophic concept that the human body was one and indivisible; every part interacted with and was necessary to the proper functioning of every other part; physical and psychical factors were not only recognized as present but they were actually complementary to each other. For many years, in surgery at least, we have acted as if the body were made up of individual parts; that limbs and organs could be removed provided that we could preserve life; the repercussions of such operative acts were not considered, at least they were not looked upon as the surgeon's concern; but today there is a distinct trend in medical science generally to return to the Galenic percept, to reconsider in a dispassionate way the long despised humoral pathology, to get away from vici-

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ous specialization and to recognize that if we are to cure patients we must, so far as possible, preserve organic functioning and the forces and phenomena within the body as a whole which are correlated with such organic forces

There were great manipulative surgeons fifty and one hundred years ago but, until the introduction of anaesthesia and Listerism, their work was to a great part nullified. Fortunately in one sense, but unfortunately in another, the introduction of the new methods enabled surgeons to remove entire organs with assurance and impunity in regard to the immediate safety of the patient. Their work as craftsmen was brilliant, sometimes very brilliant indeed; they put their patients back on their feet and preserved their lives; but the aftermath was too often, alas, a crippled organism, sometimes a miserable wreck that floated over the waters of life, unfitted for any useful purpose and a burden to himself and others. The surgeon did not then take into account the physiologic and metabolic activities of every related organ and how tissular and psychic effects could be produced by the ablation of an important organ. Today the trends of surgery are different.

The teaching of the surgeon is divided into three main parts: First, there is surgical handicraft or surgical technique which, of course, is essential. Second, there is surgical pathology, indicating those diseases and conditions which pathological anatomy and clinical experience consider to be best treated by surgical methods; third, there is surgical therapeutics which is very naturally so closely related to the second division that it might be considered as part of it.

We will consider modern surgical trends in the light of the three foregoing heads.

Regarding surgical technique, there is little to be said. Methods of anesthesia, hemostasis and protection against infection have been advanced to the point that almost absolute safety of the patient is assured.

It may not be amiss in this connection to briefly survey some modern trends in important divisions of surgical handicraft. In *anesthesia* ether is still the most widely used anesthetic agent, and in the hands

of the person who administers anesthetics only occasionally, is probably the safest one. Nitrous oxide, because it will not explode, is probably still the most widely used of the gas anesthetics. Ethylene is especially useful for the added relaxation it affords in thoracic and abdominal surgery. Cyclopropane is a new anesthetic gas which is very effective, but, on account of its high cost, it is necessary to use it in a gas machine that is equipped with a carbon dioxide absorber, so that the gas may be rebreathed.

Intracranial operations involve serious risk. It is well to be prepared to carry on artificial respiration and employ intratracheal anesthesia which is also of much value in operations on the thorax and upper part of the abdomen. Commenting on spinal anesthesia, Babcock is right when he says that it "is a most valuable method, and ill effects from it represent blunders in its administration."

Neurosurgery has advanced so rapidly during the past few years that it has ceased to be a part of general surgery. It not only includes operations on the central nervous system (brain, spinal cord and peripheral nerves), but also operations on the autonomic nervous system (sympathetic ramisectomy and ganglionectomy presacral neurectomy and splanchnic resection).

Chief among the diseases that have been relieved by sympathectomy are those affecting the peripheral vessels. Such conditions as Raynaud's disease, scleroderma, thrombo-angitis obliterans, Buerger's disease, chronic arthritis, spastic paraplegia, Hirschsprung's disease, constipation, amputation neuromas, traumatic sympathalgia, atypical facial pain, epilepsy, varicose ulcers, angina pectoris and malignant hypertension, have been subjected to sympathectomy and correlated surgical procedures with complete cures in some cases, and more or less amelioration in others.

In a recent article on "Cancer of the mouth," Eggers points out that since the introduction of radium and roentgen rays in the treatment of malignant growths and recognition of the value of radium, particularly for lesions of the skin, mouth, and uterus, there has been a great change

in treatment. Many of the larger clinics that have a sufficient supply of radium have almost entirely discontinued surgery for lesions of the mouth and have substituted radium for the treatment of such lesions. Radium is applied externally or by interstitial implantation depending on the situation and size of the lesion. In some clinics routine dissection of the neck is not practised.

*Electrosurgery* is rapidly gaining ground in brain surgery, amputation of the breast, disease of the gall bladder, malignancies of the rectum, and in urologic surgery, transurethral resection of the prostate gland signal services are being rendered.

In a recent article, Colby pointed out the relationship between the presence of parathyroid disease and the formation of urinary calculi and advised routine estimation of the calcium content of the blood-serum in all cases of urinary calculi.

In the study of the spinal column, the intervertebral disks have become better recognized as to their importance. Stimulated by the studies of Schmorl, who, in an exhaustive study, has described the pathologic changes of the spinal column, we now know more of the development of these disks and of their function as cushions between the vertebrae, made more effective for this purpose by the nucleus pulposus, a central area containing semigelatinous material under positive pressure. Rupture of these nuclei into the vertebral body, destruction of the disks by trauma, and avulsion of the disks into the neural canal, may all lead to symptoms and be recognized. The importance of the articulations between the vertebrae and their relationship to painful conditions of the spinal column, particularly in the lower portion, associated with sciatic pain, is now recognized by many. The hyperextension treatment of fractures of vertebrae has greatly improved the results in these cases. In *thoracic surgery* the treatment of stab wounds of the heart, the relief of bronchiectasis, pneumonectomy, properly indicated thoracoplasties, and under the stimulus of Howard Lilienthal, the prompt approach for the relief of postoperative pulmonary embolism have been thoroughly studied and worthwhile progress noted.

Surgery of the ductless glands has made important strides. While the value of subtotal thyroidectomy for patients with cardiac disorders induced or aggravated by hyperthyroidism has long been generally recognized, it was not until recently that the indications for operating on the thyroid gland were extended to include diseases for whose origin this gland was not remotely responsible. In 1933, Blumgart and his associates advocated complete removal of the normal thyroid gland in selected cases of congestive heart failure and angina pectoris. Conspicuous, temporary, beneficial results of the operation have been reported by several investigators.

Handley reported seven cases of carcinoma of the pancreas in which treatment was by implantation of radium. One of these patients has now lived seven years. Another patient's life was prolonged more than two years. A third patient was well after ten months. The other four patients died, probably from asthenia, as they had been suffering for months from malnutrition, jaundice, and vomiting. The importance of enterococci and the closely related nonhemolytic strains of streptococci in acute appendicitis is stressed by many.

Gundel and Sussbrich conclude that a peritonitis serum, to be of value, must have for its object the development of antibodies against at least three organisms: colon bacilli, gas-gangrene bacilli, and enterococci. Twenty cc. of the serum may be introduced into the peritoneal cavity through the drainage tube, or twenty to forty cc. may be administered intravenously in 1000 cc. of a five per cent solution of dextrose. For prophylactic treatment, from twenty to forty cc. is given intravenously in the same manner.

Recently, Rankin has again reviewed the problem of the treatment of carcinoma of the colon. According to him, the safety factors of the methods of treatment group themselves into: (1) preoperative care, (2) technical procedures, and (3) postoperative care. The preoperative factors largely resolve themselves into adequate decompression of the colon, and secondly, rehabilitation of the individual to withstand formidable surgical pro-



cedures. To insure effective decompression of the colon, one should invariably hospitalize these patients over a short period of time, usually from three to six days. Irrigations of the colon and mild purgatives over this period will in a great majority of cases sufficiently reduce the obstruction to allow exploration. One cannot emphasize too strongly the necessity of removing the obstruction prior to resection. If medical measures fail to do this, surgical measures are then indicated. Another difficulty is in removal of a barium medium which has been given by mouth for diagnostic purposes. This usually produces some type of obstruction, which occasionally demands operative intervention. The use of barium in this way cannot be too strongly deprecated.

During hospitalization, a diet high in carbohydrates and low in residue is used. Fluids are forced as much as possible and blood transfusions are highly desirable. The use of a mixed vaccine of streptococci and colon bacilli, which is given three days preoperatively, is of greatest value. This vaccine is given intraperitoneally, and its administration permits mobilization of the peritoneal defensive forces to an optimal extent.

A graded operative procedure, no matter which half of the colon the growth occupies, would seem to be the most sensible. All right-sided carcinomas are best resected in two stages: (1) by ileocolostomy, between the terminal portion of the ileum and the transverse colon, and (2) by radial resection of the tumor. An end-to-side anastomosis between the ileum and colon is of the greatest importance, and has definite advantages over lateral anastomosis. In the left half of the colon, by which is meant the major portion of the transverse colon, the descending colon, and the sigmoid, resection for obstruction, when decompression has been adequate, is the operation of choice. At times it may be necessary to employ colostomy as a preliminary procedure. Following colostomy, the patient in great measure vaccinates himself against subsequent peritoneal contamination. The most essential principle in postoperative care is the prevention of peristaltic action as much as possible. This is done by adequate doses of morphine and the refusals of liquids by

mouth for from forty-eight to sixty-two hours. It is a good rule to abstain from giving fluids until the patient begins to pass gas by bowel, fluids being kept up by the administration of normal saline solutions or five or ten per cent glucose solutions intravenously or subcutaneously.

The subject of postoperative disruption of abdominal wounds has recently been reviewed by Meleney and Howes. Preventive measures should be used and such efforts to prevent disruption as the greater use of fine silk when there is no infection, and the use of catgut of assured dependability when infection is present and advised. Included also are accurate approximation of the peritoneum and posterior sheath by careful closure with fine sutures, and the intelligent use of drainage and retention sutures. Baldwin admonishes to allow sutures to remain for a more extended period than is customary. He points out that in a large series of cases, extending over a number of years, he experienced no disruption since adhering to the simple rule to be in no hurry to remove the sutures. Mont Reid's use of silver wire sutures in certain cases is undoubtedly of great value.

Regarding surgical pathology, there is much more to be said respecting modern trends. Casualty and reparative surgery, of course, stands in a class by itself. Action, prompt action, is the tocsin in these cases. In elective surgery, the surgery which involves especially the ablation of essential or important organs, it is another matter. The modern trend here is distinctly toward conservation whenever possible. Although we know we can remove many feet of small intestine, short-circuit the colon, remove a kidney, a gallbladder, an ovary, or even certain nerve tracts, we are pausing before doing these things and asking ourselves what will be the physiologic effect of these operations on the ultimate life of the patient. We are asking ourselves if there is any other way of considering a diseased or impaired organ or limb except removing it. In other words, many conditions which a few years back we never paused to consider as being amenable to any other handling except surgical, we are now considering might be better regarded as due to humoral, nervous or metabolic disturb-

ances and of being pathogenic from the latter rather than from the former point of view. The lesion or lesions causative of organic symptoms may be far distant from the organ; or ablation of an organ might cause a hormonal or humoral imbalance which in the future might be a serious matter for the patient. We are not quite so sure, or so confident, about surgical pathology, so-called, as we were ten or twenty years ago. We know today that pathologic anatomy does not tell us all the tale of disease and that microbes of one sort or another work their effects affectively rather than causatively in the case of certain conditions. Today there is a trend to study living metabolism and humoral disorganization rather than dissection in tracing the origin of disease. Medical, biologic and biochemical experimentation has changed the tag on many so-called surgical diseases. Formerly surgery ignored all glands of internal secretion, many of which were even unknown. We could remove a thyroid or parathyroid gland with super-excellent technic—yes; but did we stop to ask if that patient in a few years might become myxedematous or tetanic? Did we concern ourselves much as regards the future life of the young woman whose ovaries and tubes could be so easily removed, or that the castrated man might become feminized? How much did we ask ourselves in regard to the exact role of the jejunal mucosa in contact with a very acid gastric juice? Surgeons are asking themselves these questions today and, as a consequence, there is a trend to avoid ablative surgery unless absolutely necessary.

Again, some years ago, experimental endocardial surgery seemed to point to success, but the disconcerting discovery followed that the mitral stenosis, which division of sclerosed valves was designed to relieve, was responsible only in a minor degree for the patient's disabilities. Usually the heart muscle was irretrievably damaged by toxic poisoning so that the successful performance of an ingenious and dangerous operation produced little or no actual improvement in patients who survived it.

I might refer to other surgical procedures, such as removal of the gasserian ganglion, operations for undescended tes-

ticles and so forth, but I will confine myself to saying that surgical pathology and all that it implies cannot ignore physiology nor can it afford by ablation of organs, no matter how brilliantly done, to disturb the humoral balance of the body. The trend of surgery is to consider metabolic, endocrine and other physiologic and psychological consequences, and, hence, the field of surgical pathology has become more restricted.

The orthopedic clinics of today are far less hampered than formerly owing to the fact that the origin of many diseases is recognized as due to faulty nutrition and hygiene. Furthermore, who of us a few years ago would have thought that estrin, a crystalline hormone extracted from the urine of pregnant mares, would, when painted on the skin of a male mouse, produce enlargement of the prostate and the development of large inguinal hernias? Surely the reflection of medical, physiologic and biochemical experimentation on surgery is far reaching.

Coming to surgical therapeutics, I think the modern tendency is to regard the surgical operation as not strictly therapeutic in itself but as an incident in the treatment of many diseases. The surgeon must consider himself first and foremost a physician and secondly as a surgeon. As I have already said, few diseases, traumas excepted, start in an organ and the whole patient must be treated. There is need for closer co-operation between the physician, the surgeon, and the biochemist, and the present day trend is certainly towards this in surgical clinics. Furthermore, there is need for constant surgical experimentation. By this I do not necessarily mean animal experimentation, but the study and research of every surgical case for the repercussions of the surgical act. Every surgeon's operating room should be a center of research. Abernethy said, "The hospital is the only proper college in which to rear a true disciple of Aesculapius." It is in this connection that standardization of hospital activities under the able leadership of Malcom T. MacEachern has done much for worthwhile trends in surgical endeavor. Especially should every surgeon be a general physician studying the blood and other body fluids so as to get at the root and



effects of disease and in the case of a surgical operation to endeavor to discover the cause of and forestall postoperative complications. There are biological reasons for these; let us try and discover them as well as the humoral, when they are humoral causes of other disturbances. We should, as therapists, be more than mere craftsmen; we should approach the surgical act with the physician's spirit, with the experimental mind.

It may seem strange that I as a surgeon should apparently disparage surgery; I am not disparaging it, but only pointing to new trends which are getting us away from wrong conceptions in regard to the field of surgery. I feel I am fairly conversant with the wonderful advances which surgical technic has made in the last few decades; that I fully appreciate what it has done for certain diseases in which there was no other outlook but death without it; that I fully recognize the genius and skill of the men who have with untiring zeal planned and brought to perfection certain surgical procedures; that I am not unmindful of the pioneer work of surgeons like Harvey Cushing in penetrating the uncharted surgical field of the brain, or of the many others with whose names and works you are familiar; nevertheless, none of this is inconsistent with recognition of the fact that the basis on which many of our common surgical procedures rested were not logically founded, so far as pathology and therapeutics are concerned, on the biologic and humoral origins of many organic disturbances. We are having a *New Deal* in surgery on these aspects. Instead of the field for surgery being extended, I venture to predict that it will become more and more limited according as our knowledge of the real nature of disease gained by research increases. Discovery of the real pathology of simple and toxic goiters may eliminate thyroid operations. There will always be need for surgery even ablative surgery; but when we amputate a limb we will recognize that the severing of important vessels and nerves may have serious repercussions in distant regions. The trend of surgery in the future, as it is today, will be more and more toward humorism either by directly modifying the secretory organs or by addressing itself to nervous

tracts to act on local nutritions. Serious-minded men no longer scoff at Brown-Sequard's concept of incretions and the medical world stands astounded at the revelations of endocrine research.

Opposition to newer trends must of course be expected from those brought up in the old schools of thought, the die-hards who know their old tools and their old ways and will not discard them for the new. Medicine and surgery have had to face such before; there is nothing new in it. But the younger generation and broad-minded older colleagues will seek the new light and follow the new trends. They will seek a physiologic, biologic or humoral basis for their surgical acts and by experimental clinical surgery, rather than by stereotyped dogmatic teaching, they will find it. The biologic laws which govern pathology must be discovered; we must find what regulates the life of the connective tissues, what causes its undue augmentation under certain conditions, why adhesions form, why spontaneous thrombosis and coagulation of the circulating blood occurs.

Outside microbian diseases of certain kinds, tumors and traumatic lesions, there is a vast field, principally in the humoral nervous areas, in which surgery, judiciously applied and with knowledgeable intent, may be used to correct congenital or acquired faults. Such conditions as infantilism, precocious senility, some anemias and the like, may fall within such a category. This field is vast and hardly explored, although certain surgical trends are indicated that way. This is not ablative surgery but correctional surgery. On the other hand, the surgeon of the future will not be so concerned in regard to improving methods of *removing* organs as with *methods of preserving* them and restoring their function when diseased; or, perhaps, in the future there may be a surgery of regeneration, if we can master the mysteries of metabolism and of tissular growth.

I recognize that my address has been sketchy rather than definite. I have merely wished to set you thinking of some actual and certain possible trends in surgery which will materially alter its complexion as known to many of us today. If

I have succeeded in getting you to think of these new aspects, I shall have accomplished my aim.

In closing, may I say that despite the outstanding advances made in modern

surgical practice and thought, it is well to recall the words of Rokitansky: "Those about to study medicine and the younger physicians should not forget to light their torches at the fires of the ancients."

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## Cranial Nerve Signs of Intra-Cranial Pathology\*

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The diagnosis of intra-cranial lesions has for the most part always depended on symptoms or signs of disturbed function of parts distant to the brain. New methods have not only added to the ease of diagnosis but, in supplementing symptoms and signs, proven a boon to the neuro-surgeon in establishing a positive diagnosis and an accurate localization of lesions within the cranium. However such aids to neurological study will never supplant proper analysis of neurological symptoms and signs. It therefore behooves us as medical men to "keep step" in the field of neurology and be mindful of changes that the afflicted individual presents, and understand the significance of such signs. Practitioners in your special field have the opportunity of seeing early signs of organic intra-cranial disease more often than those of other fields of medicine and surgery. Only with the foregoing thoughts in mind did I venture to accept the invitation to appear before your section and present a paper of this nature. If the following remarks do nothing more than stimulate us to greater regard for complaints referable to cranial nerves, my efforts will have been fully compensated.

In a study of cranial nerve symptoms and signs one must keep a few points fixed in mind. First, the anatomical origin, distribution and relationship of the nerves to surrounding structures; secondly, the physiological functions of each individual nerve; and lastly, the manifestations of various pathological processes. This is not as difficult as it might seem

since these three basic principles are easily correlated. I will endeavor to present some of these basic principles to you in a brief manner.

The first or olfactory nerve, a purely sensory nerve, passes forward from a point anterior to the chiasm along the base of the frontal lobe to a point superior to the anterior nasal passage. The physiological function is that of the sense of smell. Destruction as from direct pressure by a tumor therefore causes a loss of smell. A tumor arising from the mid-line frontal region may for a long period present only this one symptom. As a rule the loss is unilateral but with a large meningeal tumor it may be lost eventually on both sides. Invariably hallucinations of the sense of smell point to a lesion more centrally located. One must be alert in watching for associated optic nerve involvement and symptoms or signs from the frontal lobes as these are the proximate structures of importance.

Of all the cranial nerves, the optic nerve and its tracts within the brain offer the greatest possible array of localizing signs of intra-cranial lesions. A study of its preserved functions and determination of lost functions is most helpful in establishing the diagnosis. The loss of vision associated with intra-cranial pressure often brings the patient to consult a physician. The use of the ophthalmoscope is in this instance imperative. Glasses should never be fitted without first having given the patient the benefits of an ophthalmoscopic examination. The ophthalmologist should use the ophthalmoscope in every case for examination, and it is my belief that the

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general practitioner will find it as useful, if not more so, than the sphygmomanometer. A choked disc, an optic atrophy, an intra-ocular hemorrhage or a retinal angioma can only be detected by the use of this instrument. Numerous other diseases give ocular manifestations that make its use by the general practitioner worth while.

In conjunction with this, the use of some means to determine the size and contour of the visual fields may give valuable information. The tangent screen and perimeter give a more refined result but when these are not available, test by confrontation should be employed. A total loss of sight in one eye with optic atrophy indicates a lesion anterior to the chiasm; for example, an orbital tumor or tumor in the floor of the anterior fossa. Likewise a bitemporal field defect indicates a lesion at the optic chiasm. An enlarging neoplasm of the pituitary body of course most often gives rise to this classical sign. Other tumors, namely the congenital tumors arising from Rathke's pouch, the meningiomas from the tuberculum sellae and gliomas of the chiasm may also give rise to this syndrome. As a result of direct pressure, optic atrophy, rather than papilledema, may develop. With enlargement of a tumor in this region, neighborhood symptoms may arise. Notably among these are diabetes insipidus, narcolepsy, and the loss of function of neighboring cranial nerves three, four, six and five. The "uncinate fits" of Hughling Jackson may occasionally occur.

Homonomous defects in the visual fields place the lesion to one side of the midline and behind the optic chiasm that is in the temporal, parietal or occipital lobes. When the lesion is destructive, the field defect will be evident but an irritative lesion of the cortex may give visual hallucinations. These are of form when the lesion is in the temporal region and of color with occipital lobe lesions.

The third, fourth and sixth nerves are purely motor nerves having to do with movement of the eye ball and adjustment of the lens and pupil. These three nerves take their origin from the pons and pass to the ventral surface of the brain stem. From that point they pass forward

in close relationship to the cavernous sinus, the Gasserian ganglion and the internal carotid artery and enter the orbital cavity by passing through the orbital fissure. A disturbance in their function brings about either a diplopia or, in case of the third nerve, disturbance in control of the pupil and drooping of the upper lid. You are all familiar with the phenomena of the Argyll-Robertson pupil in central nervous system syphilis. Pontine tumors are notorious for the ocular palsies they produce. Bilateral sixth nerve paralysis is almost pathognomonic of a pontine tumor. This however must not be confused with sixth nerve weakness, a frequent sign of intra-cranial pressure without significance toward localization of the lesion. The early dilatation of pupil, ptosis of the upper lid, and later fixation of the eye ball associated with pain over the forehead is fairly characteristic of a lesion well forward in the middle fossa as in cases of neoplasm or aneurysm of the internal carotid artery. Disturbances in conjugate deviation of the eyes result from lesions within the brain stem and need not be discussed at this time.

Pain about the face is very often a complaint that brings a patient to seek aid from the dentist, from the otolaryngologist and sometimes from the ophthalmologist. The fifth cranial nerve, taking origin from the side of the pons, passes to the middle cranial fossa where the Gasserian ganglion is located and from that point fibers pass outward through three separate openings to form the three divisions. Very often the nature of the pain and local changes in the tissues indicate a peripheral process producing the pain, for example purulent sinusitis, carcinoma of the tongue or an infected tooth. In the absence of signs of sinus infection, dental caries or obvious ocular disease and neoplastic processes, one should attempt an analysis of the pain. A very transient lightning-like pain in one or more divisions initiated by a light touch, a breath of air, a facial movement, attempts to eat, etc., is characteristic of Trigeminal Neuralgia or Tic Douloureux. On the contrary a neoplasm of the ganglion or a tumor arising from a nearby structure will tend to produce a more continuous pain associated with hypesthesia or anaes-

thesia. A paralysis or paresis of the muscles of mastication adds further weight to the diagnosis of a neoplasm of or near the Gasserian ganglion. Tumors arising in the so-called cerebello-pontine angle produce numbness in the fifth nerve distribution. Invading carcinoma from the pharynx may give a picture almost identical with a tumor of the Gasserian ganglion but careful inspection and possibly studies by biopsy from the naso-pharynx establishes the diagnosis.

The facial and remaining cranial nerves have a very short intra-cranial course. The facial is a purely motor nerve except for some fibers sent across to the otic ganglion that have to do with taste on the anterior two-thirds of the tongue. A most important thing to remember is that a lesion above the facial nucleus produces a lower face weakness of the side opposite; whereas, a lesion at the nucleus or below presents a complete one-sided paralysis of the same side of the face. The former accompanies lesions of the frontal lobe that tend to involve the motor cortex. The latter occur with tumors of the pons or more notably with cerebello-pontine angle tumors particularly the eighth nerve tumor group. In differential diagnosis disease of the middle ear and mastoid as well as peripheral lesions of the nerve must be considered. These conditions rarely present insurmountable difficulties.

The eighth nerve consists of two parts, the auditory and vestibular mechanisms. Their fibers are closely associated throughout their course. An irritative lesion of the auditory mechanism gives a subjective symptom known as tinnitus. With destruction the loss of hearing appears. Likewise an irritative lesion of the vestibular nerve produces dizziness, nystagmus, past pointing, vomiting and vasomotor instability; whereas destruction causes a loss of function that finally is compensated for by the vestibular mechanism of the opposite side. The above described changes in function of the eighth nerve is particularly valuable in tumors of the cerebello-pontine angle. The progress is as a rule very slow, beginning with irritation of one or both portions of the nerve. As ringing in the ear and vertigo increase with recurrence, the hearing

is gradually lost and with the caloric test, functions of the vestibular mechanism will be decreased or lost. Signs of disturbed function of neighboring structures may develop. Hypesthesia or anaesthesia of the ipsilateral side of the face appearing first in the cornea, should be watched for. Ipsilateral facial paralysis of the nuclear or intra-nuclear type may occur. Disturbance in deglutition may be noted and finally cerebellar signs and signs of intra-cranial pressure appear. Early in the course of this syndrome, meniere's disease or labyrinthitis must be considered. As a rule the latter lack the loss of function caused by the tumor, show no erosion of the petrous ridge as demonstrated by the x-ray and will not show signs of intra-cranial pressure.

The glossopharyngeal or ninth cranial nerve is a mixed nerve. It conducts the sense of taste from the posterior third of the tongue, provides pain, touch and thermic sense to the soft palate, tonsillar region and a portion of the ear as well as innervating the musculature of the pharynx and soft palate. A loss of taste in its distribution with pharyngeal muscular paralysis may occur in cases of tumor of the medulla, pons or of the eighth nerve. Although rather infrequent in occurrence, there is a neuralgia of the ninth nerve that is identical with tri-facial neuralgia or Tic Douloureux of fifth nerve origin. It has been confused with tri-facial neuralgia, with vague throat disorders and in one instance with pain in the ear supposedly conveyed by fibers of the seventh nerve. Frequently in these cases tonsils have been removed without relief from throat pain. This pain may be precipitated by a tug on the tongue, by pressure in the region of the tonsillar fossa, by swallowing and other maneuvers that cause motion of the pharyngeal wall. The cause of the disease is unknown but its cure is readily effected by section of the ninth nerve intra-cranially.

The remaining cranial nerves are less often an aid in diagnosis. Of course alterations in the quality of the speech, alterations in the pulse or respiratory rate may accompany intra-cranial lesions but the findings are as a rule not decisive. Paresis or paralysis of the eleventh or spinal ac-



cessory and twelfth or hypoglossal nerves may occur with lesions of the medulla but are of greatest value when accompanied by muscular atrophy and associated neurological signs of either neuromata, of Von Recklinghausen's disease or in posterior fossa meningiomata. They rarely give help in the diagnosis of tumors or lesions of the cerebrum.

In closing may I stress the importance of analysis of cranial nerve functions when dealing with symptoms about the head or neck. Let's not forget that general systemic symptoms are to be correlated with signs of disease of the head because after all we must consider the individual as a unit and not as a group of unrelated structures.

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## Oral Administration of Typhoid Vaccine

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PRELIMINARY REPORT

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Since the establishment of the fundamental principles underlying the production of active acquired immunity by Pasteur in 1877, a variety of methods have been used such as intradermal, subcutaneous, intramuscular, intravenous and oral administration. Pasteur first used the oral method in immunizing fowls against chicken cholera. He fed them the attenuated organisms in their food and succeeded in immunizing them against this disease. We are all familiar with Calmette's B. C. G. vaccine. This vaccine, however, is far from being established as a safe method.

Drs. I. G. Fender<sup>1</sup> and J. Simmons, of Chicago, review the history of attempts to produce active acquired immunity by the oral administration of vaccines, especially against Typhoid, Paratyphoid and Dysentery infections. These authors report their own personal, experimental and clinical investigations:

The general underlying conception in this work is that the contents of the lumen of the gastro-intestinal tract have a definite acid-base balance and a relatively constant bacterial flora for the various levels in normal man and animals. The digestive ferments are secreted into the lumen of the alimentary tract at different levels, and hydrolysis of sugars, fats, and proteins take place in this hollow tube. Substances ingested by mouth are broken up by ferment action into smaller molecules before absorption takes place. The whole

problem of oral vaccination resolves itself into a method of preventing hydrolysis of the antigen within the lumen of the gastro-intestinal tract and insuring absorption of the unchanged bacterial proteins.

The authors think that this can be done by using bile as a vehicle. Besredka considers the action of bile as a local solvent of mucus and a desquamating agent. This introduces a mechanical factor. The antigen administered after bile would then get into the body through the desquamated areas in the wall of the intestinal tract. If this were true, it would be difficult to understand how one gram of dessicated ox-bile in one hundred cc. of water can produce such a change in the walls of the intestine when a higher concentration of bile is secreted into the duodenum in much larger volumes during the course of the day. The regurgitation of bile from the duodenum into the stomach seems to be a physiological process when the gastric acidity reaches a certain concentration. The presence of bile in contact with the gastric mucosa is probably a physiologic method of inhibiting further acid secretion. The duodenal contents may not only neutralize the excess acidity, but the bile can act by inhibiting acid secretion.

The authors have presented evidence tending to show that bile placed in the post-digestive stomach is not associated with a response of this organ in secreting

acid. The stimulation of the stomach by the oral ingestion of the protein can be inhibited by administering bile in certain dilutions before the protein is ingested. There is a period of approximately two hours after the ingestion of bile into a fasting stomach, when an antigenic substance can be passed through the stomach without exciting acid secretion.

The authors' conception of the mechanism of oral vaccine, by using bile, is based upon a different principle from that suggested by Besredka. They consider the mechanism, not as a mechanical desquamating agent, which thereby increases the probability of the absorption of the antigen through the injured mucosa, but as a physiologic process. The normal stomach during the post-digestive period (eight to twelve hours after a meal) does not have one hundred cc. of one per cent bile solution suddenly brought in contact with the empty resting stomach during a post-digestive period, the fasting acid secretion is inhibited and this is followed by a period of diminished secretion. During this time interval, an antigen can be passed unchanged through the gastric lumen into the duodenum. The acid base balance of the duodenum will be shifted toward the alkaline side and it has been shown that this is the best intra-intestinal reaction for the passage of bacteria and dissolved protein through the wall of the intestinal tract.

The authors' experimental and clinical observations have supported their opinions as here expressed.

Lloyd Arnold<sup>2</sup> discusses oral vaccine in a paper published in the *Journal of Hygiene*. He apparently supports the above workers and also considers that Besredka's<sup>3</sup> mechanical theory is in general tenable, however, he pointed out that from his experimental work he is led to believe that in Besredka's method of oral vaccination the use of bile has another explanation than the one advanced by his investigations. He says, "we are now working upon this problem; the detailed reports will be published later."

Besredka was able to feed rabbits a whole Roux flask of *B. Typhosus* without producing any effect except a slight loss of weight. It is a well known fact that the

lower animals are not susceptible to Typhoid infection. He believed that the intact mucosa of the intestinal wall acts as a barrier against invasion by the bacteria. He found by feeding fasting rabbits ox-bile just previous to feeding living *B. Typhosus* micro-organisms he could produce clinical Typhoid in them. He concluded that bile increased the absorption and assimilation of material in the intestinal tract.

Sedan<sup>4</sup> and Herrmann showed bile played a similar role in Typhoid infections of guinea pigs as it did in rabbits.

Markaroff<sup>5</sup> attempted to sensitize a series of guinea pigs *per os* with milk alone; in another series he fed the pigs milk with bile and succeeded in producing anaphylactic shock in this series.

Dietrich<sup>6</sup> fed white mice Tetanus toxin with and without bile. The mice which received the toxin with bile developed tetanus, while those that were given the toxin without the bile, although they received four thousand M.L.D.'s in each case, did not develop tetanus. The normal portal of entrance to tetanus toxin is through a wound.

A. L. Garbat<sup>7</sup> of New York reports using oral typhoid vaccine on eighty-three of his private patients but gives no record of his results. However, he does review the recorded results of using oral typhoid in Starzynski Town of Lodz and Sao Paulo, Brazil. Beginning in November, 1923, and extending to January, 1926, typhoid vaccine was administered orally to 43,196 people. Exact census stopped January, 1925; to that date 28,166 received the oral vaccine. Of this last number fifty-two contracted typhoid. Record shows that of this number twenty contracted the disease within a month following vaccination. I believe we should deduct this number because it takes from four to six weeks following the course before the peak of immunity is reached. This leaves only thirty-two of the 28,166 cases that contracted typhoid who had a reasonable chance to become fully protected. This makes a morbidity of one tenth of one per cent.

Immunity is only a relative consideration regardless as to whether it is natural or acquired, active or passive, racial,



species or individual. There is no such state as one of absolute immunity.

A second group numbering 73,494 were used as controls. These were not given the vaccine. Among this group the typhoid incidence was 993. Thus the morbidity in this group was nine times as great as among those vaccinated.

In Sao Paulo, Brazil, the record shows that 28,000 people were given typhoid vaccine orally from March 1 to September 7, 1925. Thirty-five thousand doses were distributed to the people by request and they reported that they took them by themselves. This makes a grand total treated of 63,000.

No reactions were reported in either young or old cases. Among these 63,000 only eleven developed typhoid. One of these had been vaccinated by subcutaneous and oral method; of this eleven, seven of them contracted typhoid within one month and four later. Disregarding the seven we have a morbidity of .01 per cent in the 28,000, or .005 per cent in the 63,000.

Garbat describes the method of administering the vaccine orally and also summarizes his conclusion as follows: The vaccine is prescribed in the form of small tabloids similar to quinine tablets. A bile pill is swallowed on an empty stomach one and one quarter hours before breakfast and one quarter hour later a vaccine tablet is swallowed. An interval of one hour must elapse before food is taken. This procedure is repeated on the two following days making a total of three days in which to complete the course. The subcutaneous method requires three weeks to complete the course. He advises three full courses of oral vaccine given one year apart in order to acquire reasonable life protection, however, in case of direct contact it is advisable to be revaccinated. He was not able to discover any contra-indications. No reaction was observed except in a very small per cent of those vaccinated and these had only slight gastro-intestinal upsets, such as slight nausea and stomach distress. He believes that the vaccine should be given to the patient during the incubation period because in most cases where so given it has modified at least the severity of the disease.

In regard to diet there are no restric-

tions except the vaccine must be taken on an empty stomach. The individual can eat as usual otherwise.

There is no definite experimental evidence to show just how rapid the development of immunity is following the oral vaccination. Figures are given showing that the peak of immunity is reached in two to four weeks. Using the subcutaneous method we have fairly reliable experimental evidence that there the peak of the immunity is reached in four to six weeks.

Garbat lists the advantages of the oral method as follows: (1) public will accept this method more readily; (2) takes less time to give this vaccine, only three days; (3) no severe reactions, vaccinated individuals can go about their business as usual; subcutaneous method sometimes causes such a severe reaction that it results in loss of time from business; (4) he also claims that the oral method gives just as good immunizing results as does the subcutaneous, if not better.

Gauthier<sup>8</sup>, Surgeon General of the French Army reports his experience with refugees and others in Greece. He reports his experience with a total of four thousand that were given typhoid vaccine orally. In one town where there had been two hundred cases of typhoid in two months time only one new case developed after one thousand had received oral vaccine. Previous repugnance to taking the vaccine was overcome by the change to the oral method and the entire population in the town was protected although nothing was done to purify the water supply.

In the two large villages the entire population took the vaccine and only four new cases developed subsequently. All four of these cases developed during the negative phase of the action of the vaccine.

Cantacuzene<sup>9</sup> and Penactescus. These men report statistics covering 8,673 persons who were vaccinated by the subcutaneous method, 2,575 persons who were vaccinated by the oral method, 5,575 controls who received no vaccine. During six and one-half months following the giving of the vaccine, ninety-six cases of typhoid and three cases of paratyphoid had developed in all three groups. Nine of these

had been vaccinated, three by the subcutaneous method and six by the oral method. This left eighty-four cases of typhoid among the controls. The incidence, therefore, by percentage was 0.035 per cent among those vaccinated by subcutaneous method, 0.26 per cent among those vaccinated orally and 1.8 per cent among the controls.

Victor Burke<sup>10</sup> and LaVerne Barnes. These workers experimented with rabbits and found the subcutaneous method more effective than the oral. They concluded from the results of their experiments with rabbits that the subcutaneous method affords adequate protection against typhoid. Any superiority of the oral method from a practical standpoint is limited to its simplicity of administration and reduction of toxicity. They did not take into consideration its economic value

It is our opinion that proper evaluation of the relative merits of the two methods must be obtained by experiments carried out on human beings, not on animals.

Solovriff<sup>11</sup> and Gandelsman used cultures of Shiga bacilli instead of bile to sensitize the intestines. They reported no actual figures on their work but claimed generally as good results with the Shiga bacilli as with the bile.

Eustace Cluver<sup>12</sup> reported his experience with the oral administration of typhoid vaccine in the Union of South Africa. He states that there the incidence of typhoid is high because of unhygienic conditions and an illiterate, ignorant and superstitious population. At that time he reports an incidence of typhoid among the miners as being generally over five per thousand.

Inoculation by the subcutaneous method was impractical there because of the resistance offered by the natives to the somewhat painful process.

Triple typhoid vaccine was prepared according to the Besredka method by the South Africa Institute for Medical Research. The first large scale experiment was made in the Gernston Area Mine A.

J. H. Pirie<sup>13</sup> and A. D. Orenstein. Two compounds were selected, one housing 1,850 and the other 1,750 natives. Between January 4 and 12, three thousand,

five hundred natives were given the oral vaccine. During this time twenty typhoid patients were admitted to the hospital. During the epidemic there was an incidence of fifty-three typhoid cases. After January 12, no further cases were admitted to the hospital for several months. Of the twenty typhoid patients admitted after the vaccination, four had not received the oral vaccine. The other sixteen were incubating the disease when vaccinated.

The oral vaccine was introduced also at the Witwatersrand Gold Mines in 1923; at that time the typhoid incidence was 23.3 per thousand. In 1924 the incidence dropped to 10.4; in 1925 to 10.1; in 1926 to 5.2; in 1927 to 4. Cluver<sup>13</sup>.

*Conclusion:* The experience in the mines and in the urban areas of South Africa, although observations have not been made on strictly experimental lines (no satisfactory control experiments having been practical), would yet appear to indicate very definitely that the degree of immunity established by the oral method is at least equal to that obtained by the subcutaneous method. He states that the oral method has two very definite advantages. The subjects, especially natives, are generally much more willing to take medicine by mouth than by injection with a needle. No malaise follows the oral administration whereas unpleasant sequelae often occur with the subcutaneous method.

Rachel E. Hoffstadt<sup>14</sup> and Randall L. Thompson and Carl L. Martin. These workers made an exhaustive study concerning the production of agglutinin precipitin and lytic antibodies in the blood of people who had had typhoid vaccine orally as compared with those who had received it subcutaneously. They found that these antibodies are found in the blood of both groups and that there is no delay in the appearance of agglutinins with the oral method over that of the subcutaneous method. Bile seems to be an aid in the production of agglutinins.

Andrinus Piffer<sup>15</sup> and Helen Daw. These workers studied the types of agglutinins in the blood of orally vaccinated people. They confirmed other workers' results in that they found the antibodies present.



They also showed that these antibodies were present one week after the termination of the vaccination course and they reached a peak in three to four weeks which is a somewhat shorter time than is necessary for the immunity to reach its peak in the subcutaneous method.

Joseph Simmons<sup>16</sup> administered typhoid vaccine orally to eighty-five people and found the appearance of agglutinin antibodies in their blood three weeks after the termination of the course.

Louis Tuft,<sup>17</sup> Elizabeth Yagle and Stuart Rogers. These workers found the antibody response after oral administration was completely negative in spite of the use of different strains of vaccine and different groups of persons.

They found the intradermal method of administration the best. The results of these workers differ radically from those of other workers.

Results obtained with the oral method of giving typhoid vaccine in the Bacteriology Laboratory, University of Oklahoma Medical School.

The following are the results obtained from the taking of oral typhoid vaccine by ten persons, four of whom had never had typhoid vaccine, one who had had a course of subcutaneous vaccine fifteen years previously and the other five were students who had had a course of subcutaneous vaccination last year. Before administering the vaccine capsules an agglutination test from each person's blood was run. The vaccine was then given and a period of six weeks was allowed to elapse before testing the blood again for antibodies. The results of these tests are set forth in the following table:

Person tested	Agglutinin titer of blood before taking oral vaccine	Previous Vaccination	Agglutinin titer of blood after taking oral vaccine
No. 1	1-80	1934	1-640
No. 2	1-160	1934	1-1280
No. 3	0	1920	1-640
No. 4	1-80	1934	1-640
No. 5	1-100	1934	1-640
No. 6	0	None	1-320
No. 7	1-80	None	1-160
No. 8	1-80	1934	1-640
No. 9	0	None	1-320
No. 10	0	None	1-320

Agglutination tests were run using dilutions from one to forty up to and including one to 2560.

Until the present year the Bacteriology department here has given very little thought to the oral administration of vaccines of any kind. It was brought to our attention by one of our leading biological houses and we rather half-heartedly started work with it. The results of our experiments have encouraged us to further investigate this problem. They confirm generally the findings of the majority of research workers with oral administration of typhoid vaccine.

No reaction resulted in any one of the ten vaccinated. This method used was a modification of Besredka's method. Bile was given with the first dose only. We intend using the original Besredka method with our next group.

A study of the protocol showing the results of our experiments reveals that the blood of those individuals who had been previously vaccinated by the subcutaneous method showed a higher agglutinin titer six weeks after the administration of oral vaccine than did the blood of those who had had no previous vaccination.

The blood of all showed definitely the presence of agglutinins running from a titration of 1-160 to 1-1280. The agglutinating effect of an individual's blood on *B. Typhosus* is now generally accepted as a measure of his resistance to typhoid fever.

The oral method of giving typhoid vaccine (as far as the results of our experiments go) produces a concentration of agglutinin antibodies greater than having typhoid fever does.

We hope to test out more extensively the value of this method of administering typhoid vaccine. If it is really as effective as the subcutaneous method it will mean a great saving in time and money to the State of Oklahoma, should they adopt it in the public health work.

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*Dr. E. Goldfain, Oklahoma City:* I have been reading the book "Local Immunization." If you want to read something interesting then read of the work of extract therapy, staphylococcal and streptococcal development in therapy of local immunization. It certainly reads nicely. I am certainly glad Dr. Moor presented this picture of the work and I would like to hear what the percentages were.

## Colles' Fractures\*

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Your Committee asked me to discuss some phases in the diagnosis and treatment of Colles' fractures.

The particular fracture under discussion is the one described by Colles<sup>1</sup> in 1814. It is caused by an indirect force to the wrist, fracturing the lower end of the radius bone transversely and usually the styloid tip of the ulna bone. It is usually caused by a fall on the out-stretched hand or some powerful force exerted on the heel of the hand and directed toward the wrist. There is a backward displacement of the lower fragment of the radius so that the lower articulating surface faces upward towards the dorsum of the hand. Normally it faces towards the palm of the hand. The fragments may be free of each other or they may be tightly impacted.

Colles' fracture, according to Bardenhauer,<sup>2</sup> is first in frequency of all fractures. Dupuytren, Hoffa and Strop<sup>2</sup> report that it constitutes ten per cent of all fractures.

It would be hard to find a physician who has practiced long who has not come in contact or treated a Colles fracture. It

would seem that the treatment of such a common fracture would be more standardized and results of treatment more uniform.

I am certain that everyone of my listeners is acquainted with the classical steps in reduction of a Colles' fracture, so that it is not necessary to go into details at this time.

It has been my duty to attend a fair number of these fractures and I must admit my results have not always been satisfactory. In connection with industrial work it is also my duty to examine many patients from various parts of Oklahoma who have suffered from Colles' fracture and who have been treated by their local physicians. Many of these cases show perfect results from treatment. There are many, however, that do not show as good results as might be obtained.

It is my opinion, after reviewing these cases, that reduction is made in the usual manner, but that the reduction is not sufficient. As you know the reduction is usually made by first increasing the deformity and then rotating or forcing the distal fragment so that the articulating surface faces toward the palm. In the impacted

\*Read before the Oklahoma State Medical Association meeting at Oklahoma City, Oklahoma, on May 14, 1935.



case it is very essential that the impaction be broken up and proper alignment made. I have yet to see one that has been over-corrected.

There may be circumstances where reduction must be made before x-rays are taken, but ordinarily such procedure is inexcusable. The sooner the reduction is made, better are the chances of obtaining good results. An x-ray should always be made immediately following manipulation. With this x-ray we can tell if reduction is correct. At this point I want to discuss how to properly interpret the x-ray film. What may seem like a good reduction at a casual examination of the x-ray film may prove later to be a poor reduction and a crippled patient. By the use of a small instrument known as a "projector" (Fig. 1) certain angles can be

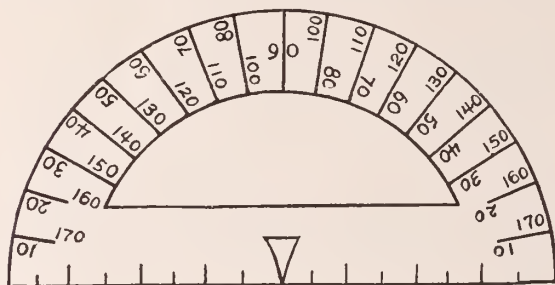


FIGURE 1

Diagram of projector with degrees of angulation.

measured on the x-ray film that will tell you definitely whether the reduction is correct or not.

About fifteen or twenty years ago some of the roentgenologists began using a system of lines and angles to determine the amount of displacement in Colles' fractures and also to determine the degree of reduction. One of the earliest midwest writers was Skinner<sup>3</sup> of Kansas City. A few articles on the subject appeared sporadically at long intervals.

Ten years ago McBride<sup>4</sup> of Oklahoma City read a paper before this Society in which he mentioned the importance of charting the x-ray films.

The use of any standard system has been, in my opinion, considerably neglected. If it had been generally used, it is quite likely that the disabilities would have been reduced and many a patient, who is now suffering from pain, loss of

earning power, and a less comfortable existence, would have been cured. In these times the struggle for existence is difficult enough, at best.

In my office we use a system of lines and angles to determine the degree of reduction, and also use this to determine the amount of permanent disability in healed fractures.

As previously stated, in a Colles' fracture the distal fragment, at the lower end of the radius, is displaced or rotated backward, so that the articulating facet usually faces dorsal-ward instead of towards the palm as in a normal wrist. The x-ray in the lateral position is first studied. We draw a line through the long axis of the shaft of the radius. This is our foundation. Another line is drawn on the film touching the dorsal and palmer tips of the articulating surface of the lower end of the radius. This line, of course, will cross the foundation line. Any one of the angles formed may be used, but we, from practice, use the angle on the palmer proximal side. (Fig. 2). We checked many normals

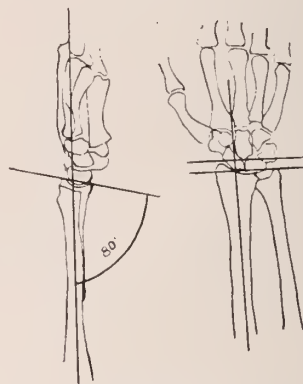


FIGURE 2

Diagrammatic outline of bones of the wrist, showing lines and angles in the normal.

of our own to determine what we considered a normal angle and we found it to be eighty degrees. Stevens<sup>5</sup> estimated this to be from seventy degrees to eighty degrees with an average of seventy-two degrees. If you measure the angle in a Colles' fracture before reduction is made you will find the angle to be one hundred and five degrees to one hundred and fifteen degrees. A reduction is then made and the angulation determined on the new film. If the angle is more than ninety degrees, further reduction is necessary. If it is under seventy degrees, over-correction has

been made. On the wet film the projector can be held close to the film and the degree of angle estimated very closely.

We also check the amount of impaction, according to a plotting of lines, which I believe was first used by Sante.<sup>6</sup> The anterior posterior view is now studied. Again a line through the long axis of the radius is the primary line. Another line is drawn at right angle to this first line and is made to touch the tip of the ulnar styloid. A line parallel to this second line is then drawn, touching the tip of the radial styloid. Normally this last line should be three-eighths to five-eighths inch distal to the one touching the ulnar styloid. The variation is due to age and size of various individuals. If the tip of the radius is proximal to the ulnar line a severe impaction is present and a bad deformity will result unless corrected. A moderate impaction will show a narrowing of the space between these lines. (Fig. 3).

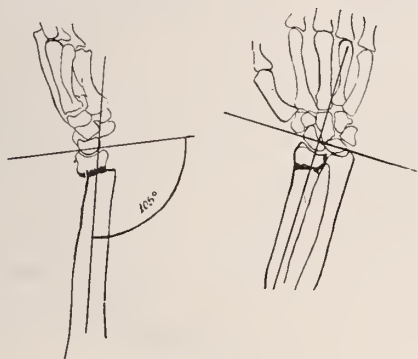


FIGURE 3

Lateral view (a) shows diagrammatic line of fracture and displacement of Colles' fracture. Anterior posterior view (b) shows marked impaction of the lower end of the radius.

The whole crux of this matter, in my opinion, lies in the fact that when the reduction is made and an x-ray taken we are too prone to be satisfied with the reduction without actually determining that a full and complete reduction has been made. I am making a plea for a more careful examination of the film and a greater precision in the reduction.

We have also attempted to evaluate the amount of permanent disability in terms of uncorrected angulation of the fragments. We also recognize that impaction with radial shortening, soft tissue damage, and post-traumatic arthritic changes must

be taken into account in arriving at the amount of disability. However, I feel that a greater portion of the disability is due to failure to correct the angulation. For a working basis, to determine the disability in terms of degrees of angulation, we feel that an angle of eighty-five degrees, which is five degrees above normal, will give no disability. But if the patient has a ninety degree angle he will have from ten per cent to fifteen percent disability. Patients with more than ninety-degree angle will show an increasing amount of disability, which we estimate to be approximately five per cent for every degree over ninety degrees. This is given as a working basis, which from time to time may need some amendments, but has been of practical benefit to me.

After the reduction is made there is, as a rule, very seldom any trouble of maintaining this reduction. A well padded and not too tight, anterior and posterior splint should be used. I prefer to use felt pads, or sheet wadding anterior and posterior and then apply a circular plaster bandage, but always immediately split this bandage on two sides so that I have a posterior and anterior plaster Paris splint. An unsplit plaster bandage will invite catastrophe. The hand and dressing should be inspected daily, if at all possible. If progress is satisfactory the splints are removed the fourth day and gentle massage given with passive and active manipulation of the fingers. On the eighth day the arm is again re-x-rayed. By this time the patient is made to flex the hand as much as possible without undue pain and he may also begin extension at that time. This should be done gently, of course, as any undue strain or forced manipulation can displace some of the fragments this early. However, there is little danger of displacement of the fragments by flexing the hand. In the average case all heavy splints are discontinued at the end of two weeks. A light dressing, re-enforced by wood tongue blades is sufficient for another week or ten days. After the second week massage and manipulation are somewhat increased in vigor and more active motion is prescribed. A final x-ray is made at time of dismissal.

#### Summary:

1. A description of Colles' fracture is



given and frequency of this fracture noted.

2. A plea is made for:
  - (a) An early reduction.
  - (b) A complete and correct deduction by breaking up of compression and correction of angulation.
  - (c) X-ray examination before and after manipulation and follow-up x-rays.
3. A system of lines and angles to be used on x-ray film in Colles' fracture is reviewed. These are given to aid in determining precision in reduction and as an aid in determining permanent disability in old healed cases.
4. Method of immobilization and after-treatment used by author is given.

\* \* \*

### DISCUSSION

*Dr. Earl McBride:* This is a very timely paper. It seems that no matter how many times we talk about the thorough reduction of Colles' fracture, we continue to see Colles' fractures that are only partially reduced. There is not so much trouble with fractures that are actually obviously displaced. It seems that the fractures that are more often neglected are those which, when the patient comes in, do not look as if there is much displacement, and in examining the x-ray we are often times satisfied with the alignment of the shaft. Now, I believe these lines Dr. Wiley has called attention to are important, and I believe they should be used. If you are used to them in your mind you don't have to actually draw them on the x-ray film, but if there is any question in your mind at all about the fracture, a simple line drawn on the x-ray may save you a lot of disability and impairment. This fracture is so easy to reduce, and it is probably more overlooked than any other fracture and is less thought of by the patient until they have their deformity. Another error is the failure to give an anesthetic and see that you have complete relaxation. Most patients with Colles' fracture tempt you to go ahead and reduce that fracture without an anesthetic. They say, "I can stand it. Go ahead and fix it." If we are not on

our guard, we may attempt to reduce it without an anesthetic. A high percentage will not be reduced according to the angles Dr. Wiley has spoken of, and if they are not reduced according to these angles, you will have deformity in spite of everything, and of course you know the seriousness of deformity. I believe I want to emphasize again the simple use of these lines. Sometimes we forget about impactions. An impacted fracture is just as important to be reduced as the ordinary type that shows on the face that it is not impacted. Sometimes we feel that we can go ahead and set the fracture without an anesthetic, but to get that fragment down and keep it in place, you simply have to give the patient an anesthetic and have the muscles relaxed, or you will not have a good reduction.

*Dr. Wiley:* I have nothing more to say except to thank Dr. McBride for his discussion and for his emphasis on breaking up impactions. This is extremely important in overcoming disabilities.

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### RELIABLE APPARATUS

The Oklahoma State Medical Journal has received from the American Medical Association a small pamphlet containing a list of the apparatus accepted by the Council on Physical Therapy, the first one published under the direction and supervision of the Council. In addition to the list and description of accepted apparatus, the pamphlet contains indications for the use of each type and a statement relative to efficacies and dangers.

This pamphlet is a real contribution on the part of the American Medical Association in behalf of rational therapeutics—an effort to help place physical therapy on a sound, scientific basis for the benefit of the medical profession.

One of the purposes of the Council on Physical Therapy is to protect the medical profession, and thereby the public, against inefficient and possibly dangerous apparatus and against misleading and deceptive advertising in connection with the manufacture and sale of devices for physical therapy.

"Apparatus Accepted" includes all the devices accepted by the Council prior to May, 1935. Any physician can obtain this pamphlet free by writing to the Secretary, Council on Physical Therapy, A. M. A., 535 North Dearborn Street, Chicago, Illinois.

# Tuberculosis Complicated by Pregnancy\*

J. T. WOODBURN, M.D.  
MUSKOGEE, OKLAHOMA

In attempting to prepare a paper on the relationship between pregnancy and tuberculosis one soon confronts difficulties and finds it almost impossible to present many accurate facts or true deductions agreed upon by all authorities. As the literature is reviewed a great divergence of opinion is found and comparison of the various studies is difficult because the various authors do not agree on a uniform set of definitions and terms. Dr. Allen K. Krause,<sup>1</sup> the editor of *The American Review of Tuberculosis*, in the February, 1935, issue denounces almost all previous studies for a number of reasons, principally the assumption that pregnancy acts as a constant factor in its influence on tuberculosis and the general term "pregnancy" has nearly always included three phases: pregnancy, parturition, and puerperium. For a perfectly normal pregnancy, labor and puerperium this combination of terms may be all right, but when we encounter the intoxications of pregnancy, long difficult labors or puerperal infections we see that each condition has its individual effect and may change the course of tuberculosis to a marked degree.

If we do accept the usual use of the term "pregnancy" as stated above we will still recognize the fact that it acts in widely different ways with different patients. Although we all believe that pregnancy is a normal function for the female, some authors give the impression that it is an evil experience. Every obstetrician has patients whose health is undoubtedly improved with each pregnancy and other patients in whom pregnancy impairs their general well-being and a gradual failure of health results. Likewise in tuberculous patients, we see some whose tuberculosis improves and sometimes actually becomes arrested during the course of pregnancy, while in others the tuberculosis is made worse and a progression of the disease follows. Thus we see one of the most im-

portant problems retarding our efforts to gain an accurate knowledge of the relationship between pregnancy and tuberculosis. In view of this problem Dr. Krause believes that our opinion should be concerned with quantitative effects and he suggests as follows:

"May it not be that pregnancy exerts a harmful effect on tuberculosis in those women who without tuberculosis would naturally tolerate pregnancy poorly, and a harmless or even beneficial effect on those tuberculous women who without tuberculosis would stand pregnancy well or even have their bodily economy improved by pregnancy?"

Since as yet no definite workable plan has been devised to solve this problem we are forced to form our opinions by a review of the most recent works on the subject even if most authors do treat pregnancy as a more or less constant factor in its influence on tuberculosis and also include pregnancy, parturition and puerperium under the one term.

Now, although we do accept the above assumptions we are immediately confronted with another situation having a marked effect on our study. It is the kind of provisions we have for the care of the pregnant tuberculous woman in the United States. A survey of our sanatoria reveals that the pregnant tuberculous woman receives only a fraction as much sanatorium care as her non-pregnant sister. A large percentage of our sanatoria will not accept pregnant women and of those who do many do not keep her during labor and the puerperium. Is it any wonder that most of the literature of the past has presented such pessimistic reports? An extensive survey of these sanatorium provisions was made by Alice M. Hill<sup>2</sup> and presented in the August, 1927, issue of *The American Review of Tuberculosis*. She found that much of the previous data on the effect of pregnancy on tuberculosis must necessarily be discounted because in

\*Read before the Oklahoma Medical Association meeting at Oklahoma City, Oklahoma, May 14, 1935.



a great number of cases the care given a pregnant tuberculous woman is not comparable with that given the non-pregnant. A questionnaire sent to the 463 sanatoria in the United States admitting tuberculous women brought replies from 413. Of these seventy-three had no provisions whatever for pregnant women; eighty-seven accepted them and kept them through delivery and 247 accepted cases but did not keep them through delivery—the time when they need sanatorium care most. Six sanatoria reported that no cases had been admitted. It was found that in only twenty-eight states were there institutions which accept tuberculous women and care for them during delivery. Among the 247 who do not accept such cases but transfer them for delivery some were found which discharge the patient during the sixth month, some during the seventh, some during the eighth and some just before delivery. These women are then cared for in a variety of ways and are usually delivered in a general hospital or in the home. And many are not in contact with a tuberculosis specialist during these trying months—the months most fraught with danger. We will all admit that these women who are turned out of the sanatoria are not receiving adequate treatment and it is unfair to compare their subsequent course with that of similar tuberculous patients whose treatment in the sanatoria is not interrupted.

In 1928 Alice M. Hill<sup>3</sup> presented a rather extensive statistical study of the relationship between pregnancy and tuberculosis as found in 349 mothers known to the tuberculosis clinics and sanatoria of Detroit, Michigan. It was found that only about one-third of this group were known to have had as much as six weeks sanatorium care. The ages and the order of pregnancies of the entire group corresponded closely with the ages and order of pregnancies of all white mothers in Michigan, but the maternal mortality rates varied from that of the general population. However, the maternal mortality rates did correspond rather closely with the death rates of all tuberculous women. The general conclusion was "that pregnancy had no appreciable bearing upon the progress of the tuberculous disease."

Another author, Von H. Braeuning,<sup>4</sup> in a

recent publication on pulmonary tuberculosis and pregnancy presents some interesting conclusions after a study of the histories of 215 tuberculous women in whom there was a total of 360 pregnancies. He agrees with Dr. Krause that it is difficult to collect and evaluate the mass of data presented by numerous authorities on both sides of the problem but he does believe that pregnancy has a detrimental effect in general but not nearly so frequently as has been believed.

Another paper on "The Influence of Pregnancy on Pulmonary Tuberculosis" by George G. Ornstein and Maurice Kovnat<sup>5</sup> was published in the February, 1935, issue of *The American Review of Tuberculosis* and is as clear and useful a report as has been presented to date. They base their study on the records of eighty-five tuberculous patients who were delivered at Sea View Hospital in New York City during the last ten years. They divided their cases into groups and made a classification based on the character of the pulmonary pathological processes. Their two main groups were Exudative and Productive and the Exudative was further classified into benign exudative, exudative productive and caseous-pneumonic. They classified their eighty-five cases of pregnancy in this manner and found that all thirty-one of their deaths were in the caseous-pneumonic group in which the prognosis is bad in any case of tuberculosis. A careful comparison of fifty-one pregnant women in the caseous-pneumonic group with a like number of non-pregnant tuberculous women revealed 80.37 per cent died or progressed in the pregnant group while 94.00 per cent died or progressed in the non-pregnant group. Their figures are quite convincing and they summarize as follows: "That the bad prognosis did not depend on the pregnancy but on the character of the pulmonary tuberculosis."

In the 1934 Yearbook of Obstetrics and Gynecology, DeLee and G. T. Palmer<sup>6</sup> express the opinion that pregnancy is to be avoided in tuberculous women until at least two years after the complete arrest of their tuberculosis.

Some men say that all tuberculous women should be aborted at about three or four months, but no one has ever presented reliable convincing proof that this

is the proper procedure, especially if the patient gives a history of improvement with previous pregnancies. Many of us also doubt if it is proper to abort far advanced cases for a large proportion of these abort spontaneously.

One point which should be mentioned is the disposition of the child. It is agreed by all that the child should be separated from the tuberculous mother immediately after birth. This, of course, is something that no mother is anxious to do and grief and worry sometimes follow, thus creating an unfavorable attitude for recovery.

*To summarize:*

1. The fallacies of much of the data of previous studies and the great divergence of opinion makes it difficult to draw many definite conclusions.

2. The pitiful lack of sanatorium provisions for the pregnant tuberculous woman makes it unfair to compare the course of her disease with that of patients receiving adequate sanatorium care.

3. As the tuberculosis is the prime condition the delivery should take place preferably in a sanatorium, but if it necessarily must be in a general hospital or in the home; a tuberculosis specialist should also be in attendance.

4. From recent works it appears that pregnancy in tuberculosis is not nearly so harmful or such a great evil as was formerly supposed.

5. A closer cooperation between the obstetrician and the tuberculosis specialist is very desirable.

In conclusion it may be said that the parts of this paper are rather hard to correlate but the author will feel justified in presenting it if it serves only to create an interest in the formation of a workable plan whereby the history of every case of pregnancy and tuberculosis—whether in the largest sanatorium or the smallest rural community—will be preserved in a form useful in creating accurate data on this subject a few years hence.

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#### Thirteenth Annual Fall Clinical Conference of the Kansas City Southwest Clinical Society

The Thirteenth Annual Fall Clinical Conference of the Kansas City Southwest Clinical Society will be presented in the President Hotel, Kansas City, Missouri, October 7th through the 10th this year.

Guest speakers, each of whom will present two or more scientific subjects, include Dr. Fred Albee of New York City; Dr. John Alexander of Ann Arbor, Michigan; Dr. Wayne Babcock of Philadelphia; Dr. Harlow Brooks of New York City; Dr. Arthur C. Christie of Washington, D. C.; Dr. Alfred Folsom of Dallas, Texas; Dr. Harry S. Gradle of Chicago; Dr. Francis E. LeJeune of New Orleans; Dr. William S. Middleton of Madison, Wisconsin; Dr. M. G. Peterman of Milwaukee, Wisconsin; Dr. Edward A. Schumann of Philadelphia; Dr. Albert Soiland of Los Angeles and Dr. Cyrus C. Sturgis of Ann Arbor, Michigan.

Scientific papers will also be presented before the General Assemblies by seventeen members of the society. In addition, two hours will be devoted the mornings of October 8th, 9th and 10th to Sectional Lectures and Clinics, presented by members of the society. These sections and clinics will be presented concurrently on non-conflicting subjects each morning.

Scientific and Technical Exhibits will be housed on the convention floor of the hotel and will be open to visitors daily.

The Public Meeting will be held Monday evening in the Ararat Shrine Temple. This meeting will be open to the public, with Dr. Harlow Brooks, Dr. Arthur C. Christie and Dr. Albert Soiland each bringing a message of special interest to the laity as well as the profession.

The scientific session of Tuesday evening will be complimentary to the members of the local county medical societies as well as all registrants for the conference. Addresses will be made by Dr. Wayne Babcock, Dr. Harlow Brooks and Dr. Arthur C. Christie.

Each day Round Table Luncheon will afford an additional opportunity for the doctors to hear informal talks by guest speakers. Tuesday's luncheon will be a testimonial to John Fairbairn Binnie with the address by Dr. Wayne Babcock. The luncheon on Wednesday will be a memorial to Jabez North Jackson.

Wednesday evening's entertainment will include a tour of the Wm. Rockhill Nelson Gallery of Art and will be complimentary to the doctors and their families.

The women's committee has arranged features of entertainment for the visiting women. All parties will be complimentary to the wives of the physicians who register for the Fall Conference.

The closing feature of the four days intensive program will be the Alumni Dinners. An added feature this year will be the Clinical Society Dinner for men and women



# Students Throughout United States Will Debate on Medical Economics

With the selection of Medical Economics as the subject matter for debate for 1935-36 by the National University Extension Association Debate Committee, the following letter from Dr. R. G. Leland, Director of the Bureau of Medical Economics, is both timely and of unusual interest to members:

Dr. L. S. Willour, Secretary,  
Oklahoma State Medical Association,  
McAlester, Oklahoma.

Dear Dr. Willour:

The National University Extension Association Debate Committee has announced the subject for debate for 1935-36. The proposition is: "Resolved: That the several states should enact legislation providing for a system of complete medical service available to all citizens at public expense."

The choosing of this proposition by the National Committee means that it will be debated by more than 100,000 students in high schools, colleges and universities throughout the United States. The debates will be heard by large and small audiences, in auditoriums and over the radio. It is anticipated that a considerable amount of public interest will be stimulated.

In order to provide students with adequate material for the study of the proposition, the Committee is devoting the eighth annual Debate Handbook to the field of Medical Economics. The editor of the volume is Mr. Bower Aly, Department of English, University of Missouri, Columbia, Missouri.

The Bureau of Medical Economics has prepared an article on the negative argument of this proposition. This article will appear in the Official Debate Handbook. The American Medical Association has also made available for free distribution to debaters the following publications of the Bureau of Medical Economics: A Critical Analysis of Sickness Insurance; Sickness Insurance Not the Remedy; Sickness Insurance Catechism; Some Defects in Insurance Propaganda. Other publications of the Bureau of Medical Economics are being furnished for library loan packages as follows: An Introduction to Medical Economics; Health Insurance in England and Medical Society Plans in the United States; Sickness Insurance, State Medicine and the Costs of Medical Care (Revised Handbook); Collecting Medical Fees; Contract Practice; The Costs of Medical Education; Group Practice; Some Phases of Contract Practice; New Forms of Medical Practice; Prepayment Plans for Hospital Care; Group Hospitalization Contracts are Insurance Contracts. Distribution of Physicians in the United States and Medical Relations under Workmen's Compensation.

Mr. Bower Aly requested that the above listed material for free distribution and for library loan packages in your state be sent to Mr. T. M. Beard, University of Oklahoma, Norman, Oklahoma.

The first printing of the Handbook on Sickness Insurance, State Medicine and the Costs of Medical Care was published by the American Medical Association in December 1930. Since that time more than 7500 of these Handbooks have been distributed throughout the United States. An examination of our files shows that since 1932 we have had

requests for material on "state medicine" from the following places in your state: Norman, Muskogee, Sayre and Oklahoma City.

The proposition for debate by students during 1935-36 has been officially announced; unfortunate as the selection may seem, I am of the opinion that it is not only impossible but also unwise to attempt to change the National University Extension Association plans. On the contrary, I believe State Medical Societies should endeavor to assist debaters to secure the most dependable printed material on the subject and an accurate understanding of the attitude of the medical profession as represented in the Official actions of the House of Delegates.

Yours respectfully,

R. G. LELAND, M.D., Director,  
Bureau of Medical Economics,  
535 N. Dearborn St., Chicago, Ill.

August 20, 1935.

## The School Child's Breakfast

Many a child is scolded for dullness when he should be treated for undernourishment. In hundreds of homes a "continental" breakfast of a roll and coffee is the rule. If, day after day, a child breaks the night's fast of twelve hours on this scant fare, small wonder that he is listless, nervous, or stupid at school. A happy solution to the problem is Pabulum, Mead's Cereal pre-cooked and dried. Six times richer than fluid milk in calcium, ten times higher than spinach in iron, and abundant in vitamins B and G, Pabulum furnishes protective factors especially needed by the school child. The ease with which Pabulum can be prepared enlists the mother's cooperation in serving a nutritious breakfast. This palatable cereal requires no further cooking and can be prepared simply by adding milk or water of any desired temperature. Its nutritional value is attested in studies by Crimm et al who found that tuberculous children receiving supplements of Pabulum showed greater weight-gain, greater increase in hemoglobin, and higher serum-calcium values than a control group fed farina.

Mead Johnson & Company, Evansville, Indiana, will supply reprints on request of physicians.

## The Therapy of the Cook County Hospital: Psoriasis

In his discussion on the therapy of psoriasis, as outlined by Theodore Cornbleet and practiced by the attending staff of the Cook County Hospital, Bernard Fantus, Chicago, (Journal A. M. A., July 13, 1935), gives the general measures of treatment which entail diet, climate, drugs and proteo-therapy. Under local therapy the removal of scales, soothing applications, irritative applications and irradiation are discussed. Prescriptions are listed for salicylate and alkali, salicylic acid ointment, compound chrysarobin and salicylic acid ointment, salicylated oil of cade pigment and ammoniated mercury and salicylic acid ointment.

# THE JOURNAL

OF THE

## Oklahoma State Medical Association

Issued Monthly at McAlester, Oklahoma, under direction  
of the Council.

VOL. XXVIII SEPTEMBER, 1935 No. 9

DR. L. S. WILLOUR ..... Editor-in-Chief

McAlester, Oklahoma

DR. T. H. McCARLEY ..... Associate Editor

McAlester, Oklahoma

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This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, 203 Ainsworth Building, McAlester, Oklahoma. \$4.00 per year; 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost provided requests for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, 203 Ainsworth Building, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

Printed by News-Capital Company, McAlester

### EDITORIAL

#### "DOCTOR"

There has been much editorial comment of late relative to the use of the word "Doctor" as a part of the trade name for so-called orthopedic shoes.

Dr. Norman D. Mattison, New York, has compiled a list of shoes as placed on the market in 1932 in which he shows that one hundred eighty-nine trade names, featuring particular lasts of shoes, used the name of "Doctor" in connection with the name of the shoe. Inasmuch as every foot deformity differs from every other one "it should be apparent that no shoe constructed according to a standardized type could be adequate for any deformed or weakened foot." (From the Journal of the A. M. A.) It is preposterous to think that a shoe salesman could reach up and

take a pair of "Dr. So-and-So's" shoes from the shelf and fit the buyer who needs some special last. There is no question but what fraud is being perpetrated by a deception which is being worked by shoe dealers in advertising certain "Doctor" brands of shoes.

The term "Doctor," as applied to chiropody, can be used only when the explanation is given of the field in which the doctorate has been granted. This applies not only to chiropody but to optometry, pharmacy, chiropractics, *et cetera*. When the term "Doctor" alone is used it implies a doctorate in medicine, and therefore the person is a full-fledged physician and any careless handling of the designation constitutes, in our opinion, fraud.

The tendency of such practice is intended only to cheapen the word "Doctor" and the profession is already plagued to distraction by the platoons of charlatans and mountebanks who pose as healers and miracle workers, using this designation.

Not only is the laity being "bunkoed" by these various "Doctor" shoes but it seems probable that some of the physicians, who know little or nothing about foot weaknesses, and deformities, are sending their foot cases to those shoe men to buy a pair of "Doctor So-and-So's" shoes. The foot ailment requiring a particular shoe is worthy of the attention of a competent orthopedist and the physician will do well to advise his clientele as to the "bunk" contained in advertising of various shoes carrying the designation of "Doctor."

#### THE NEW DEAN

Major General Robert U. Patterson has been appointed Dean of the Medical School by the Board of Regents and will begin his duties September 1st.

General Patterson was named assistant surgeon of the United States army in 1901. He became surgeon general of the army, with the rank of major general, in June, 1931. He is a member of a national board of medical examiners and the federal board of hospitalization.

The medical profession of Oklahoma will welcome General Patterson to this State. We wish to compliment the Presi-



dent of the University and the Board of Regents on his selection and will promise to General Patterson our support in his undertaking to maintain and improve the standards of medical teaching in Oklahoma.

### *Editorial Notes—Personal and General*

DR. and MRS. J. W. BROWNING, Geary, are vacationing in Colorado.

DR. T. F. SPURGEON, Frederick, is reported ill, having received severe burns from ignited gasoline.

DR. C. S. WALLACE, Holdenville, has been appointed county health superintendent of Hughes County.

DR. and MRS. J. F. PARK, McAlester, have returned from Baltimore. Dr. Park has spent the past two months studying in Vienna.

DR. E. ALBERT AISENSTADT, Picher, has returned from South America where he attended the Pan-American Medical Association Congress.

DR. L. C. KUYRKENDALL, McAlester, has returned from Mexico City where he attended the Rotary International.

### *Resolutions*

#### R. JAMES COMER JOHNSTON

Dr. J. C. Johnston, McAlester, died July 26, 1935, at Albert Pike Hospital after an illness of several months.

Dr. Johnston was born in Reidsville, North Carolina, January 3, 1878. He received his medical degree from the Baylor University. He has practiced in Amarillo, Texas, and Waurika and Wilburton, Oklahoma. He was appointed Medical Superintendent of All Saints Hospital, McAlester. In 1919 he opened an office and practiced in McAlester until the time of his death.

He was a member of Bedouin Temple of Muskogee and played in the band there for many years. He also played in the Masonic Band and was director pro tem in McAlester. He was President of the McAlester Rotary Club for two consecutive years. He was also President of the Pittsburg County Medical Society and Southeastern State Medical Society. He was a member of the Presbyterian Church.

He is survived by his wife, a son and a daughter.

Realizing the inadequacy of language to state the feeling of loss caused by the passing of a close associate in a work entering into the most intimate relationship with those we serve, your committee suggests placing upon the records of the Pittsburg County Medical Society and sending copies to the close relatives the following simple resolutions:

FIRST, An expression of our sincere appreciation of his good fellowship, his whole-hearted cooperation, his inexhaustible zeal in all of his work and undertakings, whether remunerative or not, his loyal untiring efforts in the speedy accomplishment of any task assigned to him by the Pittsburg

County Medical Society. We shall indeed miss him.

SECOND, An expression of sympathy to his wife, son and daughter and to his many friends.

J. E. DAVIS,

T. H. MCCARLEY,

R. K. PEMBERTON,

Committee, Pittsburg County Medical Society,  
Staff—Albert Pike Hospital.

### **Seventh Annual Training Course for Medical Reservists at the Mayo Clinics**

The two weeks' period, October 6th to 20th, 1935 has been selected for the Seventh Annual Training Course for Medical Department Reservists of the United States Army and Navy, at the Mayo Clinic, Rochester, Minnesota.

The program will follow the plan which has been so successful in past years. The morning hours will be devoted entirely to professional work in special clinics and study groups. Officers in attendance may select the course they wish to follow from the wide variety of presentations offered. The afternoons and evening will be devoted to Medico-Military subjects.

The staff and faculty of the Mayo Clinic will present the professional training, while the Medico-Military Program will be under the direction of the Surgeon of the Seventh Corps Area (Army) and the Surgeon of the Ninth Naval District (Navy).

Enrollment is open to all Army and Navy Reservists of Medical Departments, in good standing. Applications should be submitted to the Surgeon, Seventh Corps Area, Omaha, Nebraska, or the Surgeon, Ninth Naval District, Great Lakes, Illinois—Enrollment is limited to two hundred.

The Surgeon General of the Army, the Navy and the Public Health Service, have all signified their desire and intention of being present during at least a portion of the course.

#### **DOCTOR RAYMOND ROBINSON HUME**

Dr. R. R. Hume, age 55 years, pioneer physician of Caddo County, died August 11th, at his home in Minco, following an illness that forced his retirement from practice last April.

Dr. Hume was born at Tontogany, Wood County, Ohio, July 26, 1880, the second son of Dr. Chas. R. Hume and Annette Ross Hume. In 1881 the family moved to Caldwell, Kansas, where they remained for almost ten years. In December, 1890, they moved to Anadarko where Dr. Chas. R. Hume secured a position as the Indian Agency physician.

The deceased received his preliminary education at Caldwell; attended subscription school at Anadarko and Chickasha. In February, 1895, he enrolled in the University of Oklahoma where he studied pharmacy and medicine. He studied medicine at Fort Worth and later took his medical degree from the University Medical College at Kansas City, graduating in 1906. Locating at Minco following graduation he continued the practice of medicine until the time of his illness.

Dr. Minco is survived by wife, his father and one brother, C. Ross Hume.

Interment was in the Minco cemetery.

# ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

## EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.  
911 Medical Arts Building, Tulsa

### Toxic Amblyopia Due to Tobacco and Alcohol. Cordes and Harrington, San Francisco. Archives of Ophthalmology, March, 1935.

In 1896 de Schweinitz first wrote of amblyopia due to tobacco. Parsons later studying amblyopia from the use of tobacco thought the pathology was due to the vasoconstrictive action of the tobacco, mainly because of the already poor blood supply of the macular region. Pflimlin in the fifteen cases he reported in 1930, found a systolic blood pressure of 180 or more in the majority of the patients. He suggested that arterial spasm is an important factor in the development of such amblyopia and treated his patients with intravenous injections of a vasodilating agent consisting of inorganic salts, among which is sodium nitrite, in an isotonic solution of sodium chloride. All the patients so treated showed improvement. Other later investigators reported similar results.

Traquair of Edinburgh does not think that tobacco exerts its primary effect on the vascular system but rather poisons the nerve cells. The author on a recent visit to Edinburgh noted the unusually large number of patients there with tobacco amblyopia. It is much more common in Scotland than in America. The author raises the question as to why the incidence is greater in Scotland than it is here. He wonders if it is the kind of tobacco used or whether it is due to the fact that the people of Scotland smoke pipes more universally than do Americans who smoke more cigarettes, or whether there is a national sensitivity to poisoning by tobacco. It is not generally agreed, as noted above, whether tobacco acts as a vascular or nerve poison, but it is generally agreed that only those drugs having a direct effect on the circulation are of any benefit.

The author's method of treatment is outlined. Before starting treatment a general physical examination is done to eliminate any other complicating disease that might be present. He reports eight cases. Six of the eight patients received daily subcutaneous injections of a vasodilating agent consisting of inorganic salts, among which is sodium nitrite, in an isotonic solution of sodium chloride. The dose was 100 mg. in one cc. of the solution and the number of injections was determined entirely by the patient's response. One patient who was unable to continue his daily injections was given erythrol tetranitrate by mouth. Headache and abdominal discomfort were the only complaints following the ingestion of the tablet by mouth of erythrol tetranitrate. While the patients were under treatment they were cautioned about the use of alcohol and tobacco. The cigarettes were limited to four to six per day.

Some charts accompany this publication showing the fields taken from time to time during the

treatment and the progress of the recovery and the gradual disappearance of the scotomas. The author is of the opinion that tobacco is a vasoconstrictor and that the primary etiologic factor in amblyopia due to tobacco or alcohol is spasm of the blood vessels. He believes that the vasodilating drugs are of the most importance in the treatment of this disease. Other vasodilators besides the one he mentions in his case reports would probably be as efficacious.

### Malignant Tumours of the Nasal Mucosa. Dr. L. Woodhouse Price, Glasgow. The Journal of Laryngology and Otology, March, 1935.

The defense for this publication is the manifold types of malignant tumours of the nasal mucosa. The preponderance of tumours of the mucous membranes of the mouth, tongue, larynx and pharynx is greater than that of the nose and nasal accessory sinuses. The mucous membrane of the mouth, tongue, larynx and pharynx is mainly stratified squamous or transitional epithelium. The mucous membrane of the nose and nasal accessory sinuses presents a greater variety.

Continuous with the external epithelium the membrane lining the alae nasi and extending up as far as the anterior part of the inferior turbinate is composed of stratified squamous epithelium. Above this and lining the whole of the nasal cavity and accessory sinuses with the exception of the superior meatus there is an epithelium which has come to be termed "respiratory." Histologically it is columnar ciliated epithelium of varying degrees of thickness in different situations and, in some places, presenting a pseudo-stratified appearance due to its transitional nature. In the superior meatus there is a special neuro-olfactory epithelium-olfactory cells with non-medullated nerve fibers passing to a relay in the olfactory bulb, sustentacular cells and basal cells. The transition between the above mentioned type of epithelium is more or less sharply defined with minor irregularities and variations, such as the columnar epithelium in the accessory sinuses tends to be lower or more cubical in form and over the turbinates the epithelium is tall and may be more than one layer deep.

Thirteen cases of malignant disease which clinically affected the antrum of Highmore are reported individually and in detail including the histology, post mortem findings (if one was obtained), etc. Eighteen microphotographs are reproduced. Table One gives an analysis of the tumours including age, site, histological type, duration, treatment and result. Table Two gives the most prominent signs and symptoms of the cases. Swelling was the earliest and most constant sign.

The author's summary and conclusions are:

1. It has been shown that a wide range of malignant epithelial tumours arise in the mucosa of the nasal fossae and nasal accessory sinuses, corresponding to the diverse morphology of the normal epithelium of this region.
2. A series of cases is described and discussed, and it is concluded that



malignant tumours of this region possess highly lethal properties for which anatomical reasons are advanced. 3. The recognized difficulty of clinical diagnosis of nasal tumours is discussed, and a plea for early cytological examination of aspirated fluid is put forward. 4. The symptomatology of nasal tumours is discussed, and the frequency of extra-nasal symptoms in the absence of specific localizing signs is stressed. 5. The pathology of nasal tumors is discussed, and a simple classification is suggested according to the nature of the epithelium in which they arise. Consideration is given to the occasional occurrence of sarcomata and endotheliomata. 6. The invasion of the nasal fossae and nasal accessory sinuses by tumours of extra-nasal origin is discussed, and it is concluded that this region is invaded not uncommonly by tumours arising in the following situations: (a) epithelium of dentigerous origin; (b) glandular epithelium; (c) squamous epithelium of the palate and alveolar margin. 7. The complexity of tumours arising from para-dental epithelium is shown to be attributable to their origin from specific or multipotential cells derived from the "anlage" of the enamel organ.

**Corneal Grafting—Reparative and Optical. Lieut.-Col. R. E. Wright, C.I.E., I.M.S., Madras. British Journal of Ophthalmology, June, 1935.**

Elschnig is mentioned as having had brilliant practical results in man in a number of cases of corneal grafting. The author takes a case of a Descemetocoele with an ulcer and does a corneal graft. The diameter of the Descemetocoele was about 1.5 mm. The detail of the grafting was as follows:

The graft was taken from the cornea of a blind glaucomatous eye. An ordinary two mm. sclero-corneal trephine blade was first used to demarcate a disc to a uniform depth of about one-third the thickness of the cornea, then sloped to about forty-five degrees and rotated so as to cut through at one point. With a small Graefe's knife the disc was cut out, its edges of such a bevel that the endothelial aspect of the disc was distinctly less than two mm. It was transferred with due precautions as regards traumatism to a watch glass of olive oil and left there during the short time it took to prepare its bed in the fistulous eye. A two mm. trephine blade was employed to demarcate a circular cut around the healing edge of the ulcer and 1.5 mm. blade used to cut through at the base of the Descemetocoele. Between these two circular incisions a bevelled edge was carefully cut with fine scissors. The graft was transferred from the watch glass with a smooth spatula. The retaining sutures, loosely placed in position beforehand, were then tightened over the graft. They were planned after the manner of Tudor Thomas. The terminal exits of these bites of these sutures in the cornea were close to the corneo-scleral junction. The thread used was fine silk sterilized in wax; the needles, Barraquer's fully curved, eyed, seven mm. point to eye. Liquid paraffin with atropine was instilled into the eye, and both eyes covered with vaseline lint and banded. On the fourth day the eye was examined. It was obvious that the graft had taken, the chamber had formed, and the epithelium was continuous over the junction. As an optional achievement the operation was a failure, but as a reparative procedure a success.

Another case is described in detail which illustrates three important features in connection with corneal grafting: 1. Anterior synechiae are not necessarily a contraindication to operation. 2. Large circular grafts may be used with as great ease as small ones, and as good a chance of a "take." 3. An eye blind of glaucoma is capable of furnishing a

graft (this is important in India where such material is plentiful).

The leucoma of congenital syphilis is the ideal soil to work on, for the fairly obvious reason that capillary proliferation up to the junction can and does take place readily. In corneal grafting, uniform pressure—the secret of successful grafting—tends to be maintained by the lid pressure against the fluid intraocular bed, without elaborate aids from the surgeon.

The fact is deplored that there has been so much popular pictorial lay press publicity in regard to these operations.

**Dysphonia Plicae Ventricularis. Chevalier Jackson and Chevalier L. Jackson, M.D's., Philadelphia. Archives of Otolaryngology, February, 1935.**

"The retention of the term false vocal cords perpetuates the memory of a physiological error."—Sir Morrell McKenzie. The Jacksons disagree with the above statement. They say that he had never seen a case or he had not recognized the condition. Because of the fact that it is not generally recognized by the average laryngologist, it is hard to compile statistics in regard to its incidence. The authors estimate that four per cent of the hoarseness they encounter in their practice is due to this vicarious assumption of the phonatory duty by the ventricular bands. It may be a compensatory action for lost or impaired vocal cords. There may be an underactivity of the true vocal cords, an overactivity of the ventricular bands, an absence of the true vocal cords, a congenital anomaly, or a tumor mechanically propping the cords apart. Each condition is discussed. Other functions of the vocal cords than phonatory are: protective, tussive and expectorative. The function of the ventricular bands is to assist in the closure of the airway. With systematic training it is possible for the ventricular bands to assume the function of phonation, as for instance when a cord has been removed for early cancer without removal of any part of the ventricular band.

Under symptomatology the authors say: In a well established case of phonation with the ventricular bands the voice is rather deep in pitch and more or less rough in quality. In a case of very long standing in a patient who has taken especial pains to train the voice the phonation may be smooth and not far from normal in pitch. Double voice is nearly always present in the early stages of the dysfunction. The patient complains that his voice "breaks;" by this he means he can never be sure of the pitch; when he starts speaking, at times it may seem very good; at other times he may produce a deep or loud tone or may be unable to produce any sound above a whisper. Sometimes he may start speaking in a high-pitched tone, then the voice may break to a low pitch, and vice versa. Sometimes two tones are produced at once. In some of these cases the true cords and the ventricular bands both produce sound, usually alternating. Of course diplophonia may occur as the result of imperfect control, especially of imperfect action of the tensors; sometimes other muscles are at fault. The patient may complain of a feeling of local fatigue after using his voice for a long time. In some patients this comes on every evening and may be accompanied by aching and, rarely, by pain extending to the ears.

The treatment is systematic training and if necessary operation, being certain that the vocal cords can approximate, draw tense and vibrate, before any operating is done. The operation is nipping out a bit of tissue from the middle of the free edge of one or both ventricular bands.

## ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.  
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**Congenital Defects of the Lumbosacral Joints with Associated Nerve Symptoms. A Study of Twelve Different Types with Operative Repair.** Lewis Clark Wagner. *American Journal of Surgery*, Volume XXVII, Page 311, February, 1935.

Twelve cases are reported in detail in which the patients had various types of pain in the legs and back. The importance of the part played in these cases by congenital lumbo-sacral anomalies is well brought out. These anomalies are receiving more careful attention and are potential factors in the subsequent causes of low back pain. The symptoms usually occur in the third decade of life. The distribution of subjective pain may include the third lumbar segment to the third sacral segment, but it most frequently centers in the fifth lumbar and first and second sacral segments. In the author's series no definite paralysis occurred. Excision of long or impinging transverse processes is not satisfactory and may be associated with other changes and defects. Tumor of the spinal cord or radiculitis should be excluded. These cases explain causes of referred bizarre pain other than pressure or narrowing at the vertebral foraminae. The author's operative technique is well described and offers an excellent method of satisfactory and complete fusion of the lumbo-sacral area, including the articular facets. It seems superior to the use in this area, of the simple Albee graft which, unless carefully done, is usually difficult to fuse thoroughly.

**Fractures de Monteggia.** Alberto Inclan. *Cir. Ortop. y Traumatol*, Volume II, Page 203, 1934.

In an article on the subject of Monteggia's fractures (fractures of the upper third of the ulna with dislocation of the head of the radius), Prof. Inclan gives the results of his experience with this injury and discusses the etiology, pathology, and treatment.

He believes that such a fracture should always be regarded as serious, that it demands early treatment, and that the prognosis is increasingly unfavorable as the interval between the injury and the treatment lengthens. He states that, without the integrity of the ulna, it is difficult to maintain the head of the radius in position—there is a marked tendency to backward angulation of the ulna, delayed union is frequent, and radio-ulnar synostosis is not unusual. Therefore, correction must be maintained until there is complete union of the ulna.

The type of reduction selected, either open or closed, depends upon the individual case. The best position for immobilization is flexion at ninety degrees. The surgical repair of the old Monteggia's fracture is extremely difficult.

The histories of four recent cases and five old cases, treated on the author's Orthopaedic Service, are given. These cases illustrate very clearly the necessity of adapting the treatment to each individual case.

**Disabilities of Hand Resulting from Loss of Joint Function.** Sumner L. Koch. *Journal of American Medical Association*, Volume CIV, Page 30, January, 5, 1935.

Loss of motion in the joints of the hands presents a serious problem. Restoration of function by

operative measures is uncertain and often unsuccessful. The difficulties encountered cause greater emphasis to be placed on the preventive treatment.

After joint fixation has occurred, some form of active treatment must be given in order to restore movement. Four methods are available; splinting and physical therapy, manipulation, extra-articular operation, and intra-articular operation.

In those cases in which fixation is not absolute, considerable improvement can be obtained by splinting and physical therapy.

Manipulation has been found to be useless except in cases of injury or infection in which intra-articular or peri-articular bands do not completely block movements, but limit them and cause pain.

Good results have been obtained by the author from an extra-articular operation in which the dorsal aponeurosis is divided and the collateral ligaments released.

Of the intra-articular operations, the author reports arthroplasties at the wrist, metacarpocarpal, metacarpophalangeal, and interphalangeal joints. The results have not been good in all cases. Of eleven arthroplasties of the wrist, the results are reported as excellent in four. The author concludes that, although the results in a number of cases are not perfect, definite improvement has been obtained in a number of instances and that, with greater operative care and more persistent efforts to secure active movements following operation, still better results can be obtained.

**Influence de Quelques Metaux sur la Fixation des Composés Minéraux Dans Les Cultures D'Osteoblasties.** Contribution A L'Etude Biologique de L'osteosynthese. G. Menegaux and D. Odiette. *Press Medicale*, Volume XLIII, Page 152, January 26, 1935.

Continuing their previously reported work on the influence of various metals on cultures of osteoblasts, the authors show that only three different varieties of steel, called V2A extra, Nicral D, and Platino-Stainless D, are available for use in subcutaneous fixation of bone defects. They had previously shown that practically all metals except these three and duralumin exercised a deterrent effect on the growth of bone cells. Their present studies confirm these previous observations by showing that duralumin must be added to the group of metals which exert a harmful influence on bone growth by their cytotoxic action, as well as by interfering with deposition of calcium salts.

## DERMATOLOGY, RADIUM AND X-RAY THERAPY

Edited by William E. Eastland, M.D.  
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**Roentgen Therapy of Actinomycosis.** E. Gerard Smith, M.D., *American Journal of Roentgenology and Radium Therapy*, Volume XXXI, No. 6, June, 1934, Pages 823-29.

The literature, including European and American, has been exhaustively reviewed in regard to the radiation therapy of actinomycosis. It is interesting to note the anatomical location of the lesions in these cases. One hundred and twenty-nine cases were in the cervicofacial region, forty-five cases were abdominal lesions and twenty-one cases were thoracic lesions. Results obtained in



these cases are respectively as follows: improved, 9.36 per cent; healed, 83.44 per cent; died, 7.8 per cent. Abdominal lesions: improved, 13.13 per cent; healed, 37.74 per cent; died, 48.84 per cent. Thoracic lesions: improved, 9.52 per cent; healed, 9.52 per cent; died, 80.92 per cent. The author quotes nine cases of his own which cover a number of years dating back to 1919. During this period of time the technic of radiation therapy has varied considerably. In former years it was customary to give radiation with more superficial technic and thinner filtration, whereas, now the tendency is towards deep therapy, that is, 200 kv., with thicker filtration. In some of these cases iodides were used, whereas, in others, iodides were eliminated. Among the author's conclusions are: (1) x-ray treatment is a distinct advantage in the treatment of actinomycosis; (2) surgery is contra-indicated except the stab wound to establish drainage and to aid diagnosis; (3) deep x-ray therapy will improve the prognosis in cases of deep seated abdominal and thoracic lesions; (4) the dose should be as large as possible without the danger of harming the skin, the optimum dose being 800 r of deep therapy, equivalent to one erythema dose, utilizing 200 kv. x-ray therapy with 5 mm. cu. plus four mm. celluloid, given at intervals of one to two weeks through as many fields as are necessary.

**Roentgen Therapy of Hyperparathyroidism.** Edwin A. Merritt, M.D., and Edgar M. McPeak, M.D. *American Journal of Roentgenology and Radium Therapy*, volume XXXII, No. 1, July, 1934, Pages 72-81.

It is pointed out that osteitis fibrosa cystica is caused by hyperparathyroidism. The cardinal symptoms of this condition are pain, asthenia, loss of weight, muscular weakness, anorexia and constipation. Sometimes there is an accompanying secondary anemia and occasionally an elevation of temperature. Postural abnormalities are common in advanced cases and the blood calcium is usually elevated and the serum inorganic phosphorus decreased. The authors point out that only a minute quantity of the hormone produced by the parathyroid may cause considerably physiological changes. This being true they state that the surgeon is at a great loss to know just how much of the parathyroid gland to remove in order to obtain a proper balance of the endocrines; hence, it is recommended that these cases first be treated with x-ray therapy, as the results obtained by this measure are equally as good as surgery, and the procedure much more simple. Moreover, there is no interference with surgery if it becomes necessary later. In a series of six cases recorded the patient in general was treated as follows: roentgen therapy over each side of the cervical region, upper thorax and one over the neck posteriorly. The factors are 140 kv., 5 ma., 10-inch skin target distance, 10x15 cm. field, 6 m.a.l. filter and an exposure of 240 r to each field. Six to ten such series given at intervals of three weeks are necessary in most cases. Radiographs of the involved osseous structures accompany this article and show very nice results. All patients clinically were in good condition following the x-ray therapy.

**Irradiation in the Treatment of Psoriasis.** Rieva Rosh, M.D. *American Journal of Roentgenology and Radium Therapy*, Volume XXXII, No. 1, July, 1934, Pages 82-86.

It is stated in this essay that next to acne, psoriasis is the most prevalent dermatosis, causing no small amount of mental, physical and economic suffering. Since there is no specific nor permanent cure for this disease it is quite essential that

some method be worked out to give greater relief than has been in the past. Attention is called to the work of Foerster and Foerster which was originated in 1921 whereby x-ray therapy was utilized for the purpose of treating psoriasis by radiation to the thymus gland. Jamieson reported fifty successfully treated cases by this same method over a period of six years. Schneider agreed with Martenstein and Haucks that there was no positive roentgen ray action on the thymus gland, and it was not correct to assume a physiological relationship between the thymus and psoriasis. Gawalowski sided with those investigators who thought that radiation of the thymus gland was of value in psoriasis, and reports a series of cases in which 65.8 per cent were successfully treated. In Bellevue Hospital, where the author is a staff member, psoriasis is treated by radiation to the sympathetic nervous system. The method there consists of the application of high voltage x-ray to the spine at those levels which correspond to the nerve supply to the affected areas of the body. Only three cases are definitely reported but it is stated that several other cases were treated similarly and received equal results. The closer a one hundred per cent erythema dose was approximated the better the results seemed to be, according to those cases reported. (Editor's note—In a very few cases of psoriasis treated by similar methods the results were not particularly encouraging other than can be obtained by various other methods of treatment; that is, the lesions clear up to come back again in some indefinite length of time.)

**Ueber Die Angebliche Aussichtslosigkeit der Strahlenbehandlung beim Drusenkrebs im Collum Uteri. (The Reputed Hopelessness of Radio Therapy of Adenomas of the Cervix.)** P. Feldweg. *Strahlentherapie*, 1913, 46, 110-118. (Abstract from *The American Journal of Roentgenology and Radium Therapy*, Volume XXXII, No. 1, 1934, Page 144.)

It is a well known fact that adenomatous carcinomas of the cervix are more resistant to irradiation than pavement cell carcinomas. The prospects for cure in these cases have been considered very poor, though cases of cure have been reported, showing that the outlook is by no means hopeless.

The author reports twenty-seven cases of adenoma of the cervix, twenty-four treated by radium irradiation and three by operation. They show that there is an undoubted relationship between the size of the dose and the course of the disease. With a dose of 300 mg-hr. or less eight patients survived one year or more, one three years or more and none five years. With a dose of 5,000 mg-hr. four patients survived a year, five three years and one is well after more than five years. With a dose of 9,000 mg-hr. two patients survived more than three years and one is well after more than five years. Both of the patients who were cured were given what was more than the average dose at that time.

Histological examination as well as clinical experience shows that adenomas of the cervix should be treated with as large doses of radiation as possible in as short a time as possible.

—Audrey G. Morgan.

**Zur Strahlentherapie der Basedow'schen Schenkrankheit. (Roentgen Therapy of Basedow's Disease.)** Max Ludin. *Acta Radiol.*, 1933, 14, 28-32. (Abstract from *American Journal of Roentgenology and Radium Therapy*, Volume XXXII, No. 1, July, 1934, Page 138.)

The author is an ardent partisan of the roentgen

therapy of Basedow's disease and says that the only objections made to the treatment are made by surgeons. He even accuses the surgeons of unfairness in the manipulation of statistics to the disadvantage of roentgen therapy.

The arguments urged against roentgen therapy by the surgeon are: (1) the danger of irradiation; (2) the long duration of the treatment; (3) the recurrences; (4) the lack of demonstrable histological changes in irradiated goiters, and (5) the deaths.

With reference to the first point he says that adhesions of the capsule have been observed after irradiation, but they do not interfere with operation if it becomes necessary later. The necroses of the larynx and myxedema that were formerly sometimes seen after intensive irradiation are no longer seen with the improved technique now in use. The treatment does require a longer time than surgery and the latter is sometimes to be preferred for that reason. He also admits that recurrences are more frequent after irradiation than after surgery. It is true that there has been no histological demonstration of anatomical changes in the thyroid after irradiation but that does not affect the value of the cures. Deaths after irradiation in Basedow's disease are often due to the fact that this treatment is given as a last resort in hopeless inoperable cases. The patients die in spite of the treatment, not because of it, and the deaths should not be attributed to it.

—Audrey G. Morgan.

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
LeRoy Long Clinic  
714 Medical Arts Building, Oklahoma City

### The Superior Laryngeal Nerve and the Superior Pole in Thyroidectomies. By Charles H. Frazier and William H. Erb. *Annals of Surgery*, June, 1935.

"We have reached an impasse in the treatment of thyrotoxicosis by accepted agencies, medicinal, the roentgen ray, surgery. We know the limitations of some, the wide field and usefulness of others. There is no doubt that in course of time a new remedy will be forthcoming, a specific, and organic compound which will provide the economy with what it needs and arrest this hyperplastic process. We have already seen what a profound influence iodine or the iodides have over this process: how in the space of a week or ten days the clinical and pathologic aspects will be so profoundly affected; the metabolic and pulse rate cut in half, the nervousness gone, the proliferated cells in the acini replaced with colloid, the patient half well. Soon, I believe this new remedy will be found, and, supplementing iodide, complete the cure.

"Until then we must be content with other agencies and of these surgery gives eminent satisfaction. We acknowledge relapses in three per cent, but all in all there are no patients more grateful than the thyrotoxic subjects who have been relieved by surgical procedures."

The hazards of the operation have been reduced from year to year. The profession must not be alarmed by mis-statements that creep into the literature. For example, one radiologist recently has announced an operative mortality rate of from zero to twenty per cent, and another nondescript writer charges surgical therapy with recurrence in over twenty per cent. These statements are preposterous. In the average well organized clinic, de-

pending upon the nature of the material, the mortality for toxic goiter ranges from one to three per cent. It so happened that in Dr. Frazier's clinic in the year of 1932 the mortality rate was zero. But having deducted operative hazards to a minimum, Dr. Frazier and his associates have turned their attention to the elimination of post-operative discomforts.

In the past, after a thyroidectomy, many patients were very uncomfortable from accumulations of mucous in the trachea, frequent short cough, efforts of expectoration which were painful, pain on swallowing or various reflex pains. These discomforts Dr. Frazier and his associates feel can be done away with if there is sufficient care in dissecting and tying off the superior thyroid artery and vein. If such care is taken the superior laryngeal nerve will not be injured. In the past during the performance of a thyroidectomy surgeons generally have not been particularly careful in avoiding injury to the superior laryngeal nerve. The surgeon's mind has been focused on two structures, the parathyroid glands and the recurrent laryngeal nerves, and little attention has been paid to the superior laryngeal nerve.

The superior laryngeal nerve supplies the interarytenoid muscles, which are adductors of the posterior ends of the vocal cords. Thus, if both superior laryngeal nerves are damaged, there may be partial loss of voice. Furthermore, with injury to these nerves there may be loss of sphincteric action of the upper portion of the larynx; thus, fluids may enter the air passages.

In this article they describe a method of ligating the vessels of the superior pole and not injuring the superior laryngeal nerve, either its external or internal branch. Traction or rough manipulation of the pole itself or the structures to the inner side of it, is to be avoided. With adequate exposure dissect the superficial flap of skin and platysma at least to the upper level of thyroid cartilage, and then bisect the ribbon muscles on one side or the other, with wide retraction of the wound edges. When the pole is clearly in view, Dr. Frazier divides this reflection of the pretracheal fascia, either by blunt or sharp dissection. In the trough between these two walls of fascia lie the superior thyroid artery and vein and these may be tied, either together or separately. Thus, both branches of the superior laryngeal nerve escape injury.

LeRoy D. Long.

### Serious Hand Infections. By Louis P. Gambee. *The Western Journal of Surgery, Obstetrics and Gynecology*, August, 1935.

It is generally known that the average member of our profession is not treating hand infections as well as he is the other common surgical diseases. It is generally felt by those who have studied this field of surgery most carefully, that a large part of the permanent disability which follows these infections must be charged to our incompetence. This is a serious indictment.

In this paper Dr. Gambee confines his discussion to the essential features of the three most common hand infections—acute lymphangitis, pyogenic tenosynovitis, and the fascial space infections.

He draws important conclusions which are commonly accepted but cannot be stressed too strongly.

1. Cellulitis of the hand is not a localized process. It is diffuse and must never be incised unless localization finally takes places and fluctuation can be demonstrated.

2. Pyogenic tenosynovitis and fascial space in-



fections of the hand must be drained as soon as a diagnosis can be made.

3. Tenderness over the involved sheath associated with throbbing pain; a semi-flexed position of the finger, and a marked increase in pain upon forcefully extending it, make a diagnosis of flexor tendon sheath infection quite definite.

4. A bulging is found replacing the usual convexity of the palm of the hand when there is a midpalmar space infection.

5. Swelling and tenderness over the thenar area usually indicates a thenar space infection.

6. Serious hand infections are major surgical problems. Operations on them must be done under general anesthesia after a bloodless field has been insured.

7. The incisions used for draining these hand infections must secure free drainage and must not cut arteries, nerves or annular ligaments. The incisions must not cross major creases of the hand at right angles.

One cannot too strongly emphasize the importance of articles such as this. Dr. Gambee has made an effort to simplify the subject so that it can be easily understood. LeRoy D. Long, M.D.

**Gee's Disease (La Maladie de Gee).** By T. Izod Bennett, Middlesex Hospital, London. *La Presse Medicale*, Sept. 19, 1934.

I have just run across this article by Bennett. While it is not of a strictly surgical character it is important from the point of view of differential diagnosis.

According to the author, the disease was first described by Samuel Gee, of St. Bartholomew's Hospital, London, in 1888, and was called by him "Coeliac Disease." The author believes this name is too restricted, and since Gee gave a very accurate description of the disease he believes that it would be just and proper to have his name connected with it.

The disease always begins in childhood, and is characterized by: 1. Steatorrhea, provoking sometimes diarrhea. 2. Anemia of various types. 3. Tetany, latent or acute. 4. Infantilism. 5. Deformities of bones.

The following report gives a good mental picture of the very advanced clinical manifestations: A young girl was admitted to Middlesex Hospital. The first striking thing about her was great deformity of the bones. The legs were incurved, the knees deformed. There were deformities of some of the epiphyses of the long bones. The ribs were deformed. The mother said that throughout her life there had been a tendency to curvings of the bones and fractures. She was seventeen years of age, but had never been able to run, and, for the most part, not able to walk. At the age of two years the left humerus had bent under the weight of the body while in bed. At three years of age there was a diagnosis of rickets. At fourteen years of age osteotomy of each femur, but deformity returned as soon as walking was attempted. There had been multiple fractures, followed by rapid repair. During the entire life of the patient the abdomen had been distended considerably. In infancy there was diarrhea. After five years of age there was no distinct diarrhea, but the stools were abundant and pale. In the eighteenth year a pernicious type of macrocytic anemia developed, terminating in death of the patient.

In the cases studied by the author, the blood calcium was below normal. He believes that there is excessive deperdition of calcium by the intestine in the form of soaps. The blood phosphorous

was low, too, and it is believed that it is linked with a deperdition of this body by the intestine.

LeRoy Long.

**The Treatment of Acute Parotiditis by the Intravenous Injection of Animal Charcoal (Le Traitement des Parotidites Aigues par les Injections Intraveineuses de Carbone Animal).** By Eugene St. Jacques, Surgeon Jeanne d'Arc Hospital, Montreal.

Referring to previous communications about the employment of animal charcoal in various types of infectious processes, the author calls attention to its employment in acute parotiditis, and in that connection makes several case reports as follows:

Case 1. Acute parotiditis following acute tonsillitis. Temperature 101 F. Injection, intravenous, of three cc. of two per cent animal charcoal (carbone animal). Immediate drop in temperature with rapid cure.

Case 2. Young woman of twenty years, nurse. Acute parotiditis following acute tonsillitis with suppuration. Temperature 102 F. Had been treated by vaccines. Intravenous animal charcoal three cc. two per cent suspension. The next day there was less pain, but a temperature a little higher. Another intravenous injection of three cc. two per cent suspension of animal charcoal. There was rapid drop of temperature, and within a few days the patient was well.

Case 3. Woman of thirty-eight years. Sub-total hysterectomy with bilateral salpingectomy and appendectomy. Three days after operation there were signs of parotiditis. The temperature was 102 F. Intravenous injection of three cc. of two per cent suspension of animal charcoal. The next day the temperature was 101. It was about the same the day following, and there was another injection of four cc. of two per cent animal charcoal. This was followed by rapid improvement and apparent cure.

There are two other case reports of a similar character.

The author says that in the treatment of acute parotiditis by intravenous injection of animal charcoal the first effect noticed after the injection is the disappearance of pain, and this is soon followed by a drop in temperature.

He believes that if the difficulty is recognized at the beginning, the intravenous injection of the animal charcoal will cure the patient without suppuration.

Comment:

As stated in former abstracts of articles about this procedure, it is perfectly clear that in the preparation of the charcoal there must be facilities for reducing it to its utmost fineness, and it must be perfectly sterile. St. Jacques employs a two per cent suspension in sterile distilled water, preserved in sterile ampules. He insists that only animal charcoal ("carbone animal") should be employed.

LeRoy Long.

**Lobule of the Nose Completely Sectioned and Sutured Three Hours After the Accident.** (Cure-Lobule Nasal Sectionnee Complettement et Suture Trois Heures Apres L'Accident, Guérison.) By J. N. Roy, F.A.C.S., Professor, University of Montreal. *L'Union Medicale du Canada*, August, 1935.

A boy of seven years, while at play, struck his head against the glass of an automobile lamp with such force that the glass was broken and the face pushed through the opening. In withdrawing the face, a part of the lobule of the nose, about five centimeters long, and about thirteen milli-

meters wide, and consisting mostly of skin, was cut off. The patient at once put his hand over the nose, and went into his home, where compresses were applied because of free hemorrhage. A little later he was taken to hospital. In addition to the wound of the nose, there were several other important wounds about the face.

On learning that the tip of the nose had not been brought with the patient, the father of the patient was sent home to look for it, and he found it in a room on a carpet. It was in the month of March, and the weather was rather cool. It was not very warm in the room. The father brought the piece of the nose to the hospital where the reporter was repairing other wounds about the face. It was washed in tepid physiologic salt solution, and then placed in the same solution at a temperature of 37 degrees Centigrade (98.6 F.). At almost exactly three hours after the accident, the wound of the nose was cleaned with physiologic salt solution, and the detached part of the lobule was sutured in place with fine silk threaded in fine conjunctiva needles. The nose was then dressed with light compression, and a copper splint molded about it to maintain compression and immobility.

The dressing over the particular areas involved was not disturbed until five days after the operation. At that time it was covered by dry blood with a reddish coloration about the center which seemed to indicate the presence of vitality. This layer of dry blood gradually disappeared, and the sutures were removed about nine days after the operation. The repair was complete on the right side of the nose, but there was a slight defect on the left side. Altogether, the results were very satisfactory. This is indicated by photographs accompanying the article.

The reporter refers to the work of Carrel which proves that vitality can be maintained in detached tissue if such tissue is preserved in a refrigerator, or if it is placed in a fluid approximating the plasma of the blood. In this case, the detached tissue was preserved in physiologic salt solution, which approximates blood plasma, for a short period of time, but before that it was in a room that was relatively cool.

The reporter is very strongly of the opinion that plastic work of this character is much more successful if there is no attempt to use bactericidal agents or even antiseptic agents, such as solutions of various salts of mercury, because such agents interfere with the vitality and normal activity of the cells. It will be observed that in this case the cleansing was done by the use of physiologic salt solution only.

#### Comment:

Several requirements are of particular importance in connection with plastic work, the most essential of which may be enumerated as follows:

1. The areas should be as clean as possible, but no agent that would interfere with cell production ought to be used.
2. All hemorrhage should be controlled before the graft is applied.
3. There should be accurate suturing of the graft. This is of particular importance in connection with wounds about the face.
4. Usually, it is well to make some openings in the graft so that accumulated serum and blood may be discharged.
5. There should be accurate dressing in a way that will, as nearly as possible, immobilize the part involved, and, at the same time, produce enough pressure to keep the parts in accurate contact.

6. After the operation is finished, and the dressing applied, there should not be any meddling with the operative area before some days, unless there is some definite reason for looking into it. Early manipulation may destroy newly formed blood vessels, and seriously impair the vitality of the tissues involved. If the part is comfortable, it is distinctly unwise to remove a covering of dried blood.

7. If fine sutures are used, it is a mistake to remove them too early. The early removal of sutures involves handling the operative area, and producing manipulations which should be avoided until there is clear evidence of satisfactory union.

LeRoy Long.

#### Intraspinal (Subarachnoid) Injection of Alcohol for Pain Associated with Malignant Conditions of the Female Genitalia. J. S. Greenhill, M.D., and Herbert Schmitz, M.D., Chicago. *Journal A. M. A.*, August 10, 1935, Page 406.

These authors are reporting a series of twenty-five patients who have been treated by intraspinal (subarachnoid) injections of alcohol for pain associated with malignant conditions of the female genitalia.

They call attention to the pertinent fact that at least seventy-five per cent of all women who have carcinoma of the cervix die as a result of the condition, and that, secondly, nearly all these women suffer severe pain during the latter part of the disease. They review the present means for relief of pain: 1. Administration of derivatives of opium, chiefly morphine. 2. The use of the surgical operations of: (a) pelvic sympathectomy, (b) chordotomy. 3. The relief of pain by blocking the nerves that conduct pain sensation.

The disadvantages and advantages of the various methods are briefly outlined.

The previous reports upon the use of intraspinal (subarachnoid) injection of alcohol are carefully reviewed, including the works of Dogliotti, Yeomans, Saltzstein and Stern.

The technic of injection is described by Greenhill and Schmitz with considerable care. They have made a practice of using 95 per cent alcohol and at the present time are using a maximum of .5 cc. for each injection.

They then give their analysis of the results in the twenty-five patients here reported. Twenty-four of the twenty-five "have been relieved of their suffering."

"The complications that followed the alcohol injections were numbness of the leg for three days, six; numbness of the leg for more than three days, six; and in one case each, urinary retention for two days (had bladder invasion of carcinoma), urinary incontinence the first night, pollakiuria, "leg cold at night," paralysis of the leg for one and one-half hours, anesthesia and atrophy of the leg, and diarrhea for twenty-one days."

The conclusions drawn by Greenhill and Schmitz upon the basis of this experience in twenty-five cases are as follows:

"Our experience with twenty-seven subarachnoid injections of alcohol in twenty-five women with advanced carcinoma of the genitalia leads us to recommend this procedure in all women who suffer from excruciating and persistent pain that is associated with genital carcinoma. This injection is simple to carry out, it entails very few risks, and it has brought relief to twenty-four out of our twenty-five patients. Because it is simpler than any operative procedure and because the results are so satisfactory, we are now using it in pre-



ference to pelvic sympathectomy, which we advocated two years ago for the same purpose. We shall resort to sympathectomy in the cases in which alcohol injections fail. Until we know more about the late effects of ninety-five per cent alcohol on the spinal cord itself, it is best to restrict subarachnoid injections to patients in whom the malignant condition is far advanced."

#### Comment:

In September of 1934 the reports of Saltzstein were abstracted by me for this journal. This additional report by Greenhill and Schmitz is a very encouraging one. All of us are familiar with the disadvantages of the tremendous doses of opiates necessary in the far advanced pelvic malignancies. We are also familiar with the difficulties associated with sympathectomy and chordotomy in this situation. I have looked with favor for some time upon this method of blocking the sensory nerves as a possibility of great service in these far advanced malignancies where great pain is suffered. I thoroughly agree with Greenhill and Schmitz that this method for the relief of pain should for the time being be strictly limited to patients in whom malignant process is far advanced.

Wendell Long.

### INTERNAL MEDICINE

Edited by C. E. Bradley, M.D., Medical Arts Building,  
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By C. E. BRADLEY, M.D.

**Encephalitis Complicating German Measles—Report of a Case. H. O. Skinner, M.D., St. Paul, Minn. Journal American Medical Association, Volume 105, Number 1, July 6, 1935.**

A case of a normal, well nourished male child, ten years of age, who developed encephalitis five days after contracting German measles is reported.

Apparently convalescing from an ordinary case of German measles, he suddenly fell unconscious, and when examined immediately afterward showed pupils widely dilated and without reflex. The superficial reflexes were absent, the patellar were faint, and Babinski's sign was positive. The ear drums were normal. He was restless, and resistive, but not convulsive or rigid. His pulse was slightly decreased and temperature was normal. Morphine was given then and again in the evening.

Examination of lumbar puncture fluid and urinalysis, which were made the following day, were both negative.

A neurologic consultant confirmed the diagnosis of encephalitis.

A magnesium sulphate enema followed by a retention enema of dextrose in saline was given.

The second day of unconsciousness, he had a slight temperature, which reached 103 on the third day. On the fourth day his temperature was normal; he relaxed and asked for food although he didn't eat it. The fifth day he was slightly confused and complained of a headache; all symptoms had disappeared on the sixth day, and he has remained completely well.

The short and mild course of encephalitis following German measles is characteristic.

NOTE: The author of the abstract wishes to call attention to a case from his practice which indicates that encephalitis following German measles is not always mild. Three days after the eruption of German measles the patient developed head-

ache, convulsions and coma. Examination of the spinal fluid, including culture, was negative. A diagnosis of encephalitis was made and the child died thirty-six hours after the onset of the illness. Postmortem examination showed edema and inflammation of the meninges and nothing more.

**Clinical Manifestations of Calcium Deficiency in Infancy and Childhood. Harold T. Nesbit, M.D., Dallas, Texas. American Journal of Diseases of Children, Volume 49, Number 6, Page 1449, June, 1935.**

The author presents thirty-six cases from his practice in the last eighteen months whose various symptoms were relieved by calcium therapy.

The patients ranged from one day to sixteen months of age, three being eight, nine and eleven years of age. They exhibited the following symptoms, either on examination or in case history, in various combinations: hypertonicity, carpopedal spasm, Chevestek's sign, Trousseau's phenomena, spontaneous and provoked spasm, enterospasm, flatus, excessive crying, retractions of the head, pyloric spasm, sleeplessness, stridor, cyanosis, convulsions, and irregular respiration.

It is interesting to note that many of these patients showed the same symptoms as did those of Aldrich's series in which he stated the symptoms were of interest from the standpoint of status lymphaticus. Twelve of this series showed enlarged thymus when examined by roentgen ray; but the eight who received roentgen ray therapy received only transit or no relief, with one exception which was completely relieved.

Calcium therapy was not instituted until other factors such as diet, and treatment with x-ray, atropine and phenobarbitol had been found ineffective.

Serum calcium values before calcium therapy was instituted ranged from 7.75 to 11.3 mgg. per 100 c.c. of serum, and showed a slight rise after therapy was begun.

Calcium gluconate was administered orally, and intramuscularly with parathyroid extract. Cod liver oil and viosterol were administered when they were not already being given. Symptoms were promptly relieved in all cases when calcium therapy was instituted and recurred when it was discontinued. In one case it was necessary to increase the dosage of calcium on rainy days.

A review of these cases gives rise to a question as to whether or not the roentenologist and pediatrician have not overestimated the influence of the size of the thymus gland in cases showing cyanosis, stridor, retraction of the head, and irregular breathing. This series indicates that the total serum calcium and the diffusible (spinal fluid) calcium are both increased under roentgen ray therapy; consequently the relief which this therapy gives in cases of supposedly enlarged thymus may be due to a restoration of the calcium level rather than to an atrophy of the thymus gland. It is interesting to note that enlarged doses of calcium and parathyroid were necessary on days when the sun was hidden. Higgins and Sheard have demonstrated that an increased demand for the parathyroid hormone is made in both patients and chicks when vitamin D is lacking, but with an abundant supply of this vitamin the demand is lessened.

A syndrome of increased neuromuscular irritability and functional imbalance occurring in infancy was described which was strikingly relieved by measures that improve the absorption of calcium. The prompt relief afforded by calcium therapy in each of the thirty-six cases cited encourages

one to attribute the underlying cause to some error in mineral metabolism.

**Constipation in Children: Its Effects Upon Body Mechanisms.** Irving A. Frisch, M.D., New York, N. Y. *The Journal of Pediatrics*. Volume 6, Number 6, Page 784, June, 1935.

Because the author felt that the importance of an inadequate bowel evacuation as an etiological factor in a wide range of conditions especially those associated with convulsions or fever was a bit far fetched, he conducted a study on a series of seventeen children, between the ages of four and twelve years of age, in whom evacuation of the bowel was either absent or inadequate during the course of a number of days.

Twelve of the children were normal physically at the onset of the experiment, while the remaining were suffering from some fever-producing disease at the onset and during the course of the experiment. Each child was carefully observed during a control period of five days, in which the temperature and pulse rate were taken every two hours, and in which complete blood counts, sedimentation rate, blood chemistry and urine examinations were made. Constipation was produced by the use of deodorized tincture of opium, all other controllable factors in the child's diet and environment remaining unchanged. The observations reported above were then continued, and the blood examinations were repeated every six days.

The children were observed from sixteen to sixty-eight days, and although complete obstipation was not obtained in any case, on an average of one small, hard, dry stool was obtained every eleven days—however, two children went over twenty-five days without evacuation. In order to produce constipation thirty-five to seventy-five minims of opium were given daily; contrary to the general conception these large doses of opiate were well tolerated.

The children seemed happy and comfortable throughout the experiment; they did not complain of headache, lassitude, bad taste or the other symptoms often associated with constipation.

#### OBSERVATIONS:

1. No effect whatever on the temperature of the children undergoing the experiment could be noted.
2. Pulse rates were similarly unaffected.
3. No effect on the hemoglobin, red blood cell, white blood cell, or differential counts could be observed.
4. Sedimentation time was unaffected in either the febrile or afebrile cases.
5. Urea nitrogen, non-protein nitrogen, creatinine, and cholesterol, and blood indican remained unchanged throughout the experiment. There was an increase in the urine indican, however.
6. There was no change in the urinary findings except the increase in indican. One girl developed urinary frequency which was attributed to the pressure of impacted feces. However, there was no evidence of albumin or increase in pus cells.
7. Basal metabolism tests were made in two cases at the onset and in the terminal stages of the experiment with no appreciable change.
8. X-ray examinations of the gastro-intestinal tract in three cases revealed a similar picture in each case: there was normal gastric motility, gaseous distension of the small intestine, and a colon packed full of feces.

Thus it can be said with a fair degree of certainty that an infrequent or inadequate bowel

evacuation cannot experimentally be demonstrated as producing harmful effects in children.

NOTE: This study bears out the contention of the abstractor that the importance of laxatives and incomplete or absence of daily evacuation of the bowel has been greatly overestimated. Too often laxatives are given with no consideration of the character or amount of food ingested.

By HUGH JETER, M.D.

**The Present Status of the Problem of "Rheumatism;" A Review of Recent American and English Literature on "Rheumatism" and Arthritis.** By Philip S. Hench, M.D., F.A.C.P., Rochester, Minn. Walter Bauer, M.D., F.A.C.P., Boston; Almon A. Fletcher, M.D., Toronto; David Ghrist, M.D., F.A.C.P., Los Angeles; Francis Hall, M.D., F.A.C.P., Boston; and Preston White, M.D., Charlotte, N. C.

#### PART III

This is from a report prepared at the request of the American Committee for the Control of Rheumatism, and by a sub-committee of the same organization.

#### CHEMICAL AND ENDOCRINE ARTHRITIS

Gouty arthritis, arthritis of serum sickness, hemophilic arthritis, possibly allergic arthritis from food, and ochronosis with alkaptonuria are termed chemical arthritides.

Gout has not become extinct as recent literature might indicate, neither has it "gone modern" or changed its character. It may be confused, however, with acute rheumatic fever or chronic arthritis. "There are sharp divisions of opinion as to whether an entity such as climatic arthritis or any other form of "endocrine arthritis" really exists. Saxon and Jezierski (1931) favor the existence of such an entity. Saxon cites the usual arguments; frequent coincidence of menopause and hypertrophic arthritis occasional lowered metabolic rate in both types, prevalence of arthritis where goiter is endemic, \* \* \* The x-ray diagnosis does not necessarily coincide with the clinical diagnosis, the latter being more important in the final classification.

#### TREATMENT OF GOUT

This is not specific in any regard. "The classic treatment of gout by restriction of purine, hot or cold applications, rest, and by preparations of colchicum and cinchophen, continues unchallenged." There is some danger in the administration of cinchophen. Hench concluded that if other analgesics are effective, cinchophen products should be avoided. Cinchophen is sold in so many preparations and under so many names that it is almost impossible for patients taking medicine for chronic pain, rheumatic or otherwise, to avoid it, one time or another.

Modern investigators have suggested that allergy may be a cause of gout, but the consensus of opinion is decidedly against this theory.

Salicylates in the treatment of gout are often effective and much less dangerous than many other preparations.

#### HEMOPHILIC ARTHRITIS: "Bleeder's Joints"

Key has given for the first time in English a detailed report on its pathology and Keefer and Myers describe clinical and roentgenologic features in five cases, with a review of the literature. Diagnosis rests chiefly on the tendency to bleed and after the onset of acute joint swelling or minor injuries. Coagulation time is usually increased, but may be normal.

#### TREATMENT

Several investigators have used theelin intramus-



cularly on the basis of a lack of hormone, since this is a disease of the male only. Bernstein gave ten to fifteen c.c. of whole blood intramuscularly every other day, taking the blood from the patient's mother during her menstrual period. Chalker considers frequent injections of mother's serum the most efficient treatment of all.

Rest and immobilization are considered very important.

Hemorrhagic joint conditions may be associated with purpura.

#### MISCELLANEOUS TYPES OF JOINT DISEASE

Intermittent hydro-arthritis, "Mixed Types" of Joint Disease, psoriatica, arthritis and leukemia, "Hysterical Joints," peri-arthritis of the shoulder, and several various diseases of muscles and fibrous tissue are briefly discussed.

#### SCIATICA

The ultimate success in treatment depends on determining the likely one of the many causes. In general, rest in bed, heat, and analgesic drugs. Epidural injection is advised when necessary. Detailed investigation must follow the acute phase. Various results of various types of treatment in the lumbosacral fusion, injections and diathermy, a belt, Buck's extension, foreign protein, removal of

foci, etc., have been used by different investigators with variable results.

#### International Assembly Inter-State Post Graduate Medical Association of North America Will Be Held in Detroit This Year

The International Assembly of the Inter-State Post Graduate Medical Association of North America will be held this year in Detroit and those of us who attended the meeting of the American Medical Association in that city know that they have every facility for caring for this large meeting, the Masonic Temple being one of the most comfortable auditoriums as well as possessing acoustic properties second to none in this country.

The hotel facilities of Detroit are ample to care for this large assembly and there is no reason why this should not be one of the best meetings held by this organization.

The half page advertisement carried in this Journal gives a list of speakers and they will produce a program comparable to those of preceding meetings.

It is the opinion of the Editor of this Journal that there is no meeting held at which a doctor can receive as much general and practical information as will be obtainable at this session.

## Report of Examination for Licenses to Practice Medicine

Examination held at Biltmore Hotel, Oklahoma City, June 5th and 6th, 1935. The following applicants passed:

Name	Year of Birth	Place of Birth	School of Graduation	Year of Graduation	Home Address or Previous Location
Adams, Richard Martin	1907	Little Rock, Ark.	University of Okla.	1934	Hobart, Okla.
Appleton, Meredith M.	1908	Buffalo, Oklahoma	University of Okla.	1934	Oklahoma City, Okla.
Bunn, Arthur W.	1879	Rowell, Arkansas	Univ. of The South	1902	Savanna, Okla.
Collopy, Paul Joseph	1906	Milwaukee, Wis.	Univ. of Wisconsin	1933	Oklahoma City, Okla.
Crane, Francis S.	1909	—, Texas	University of Okla.	1933	Pine Valley, Okla.
Eschenbrenner, John Wm.	1905	East St. Louis, Ill.	Washington Univ.	1929	Ardmore, Okla.
Hoot, Melvin Phillip	1909	Arkansas City, Kan.	University of Okla.	1934	Ponca City, Okla.
Lennard, Oscar Lewis	----	Graham, Texas	Gate City Med. Col.	1907	Colbert, Okla.
Madeley, Howard R.	1909	Stockton, Calif.	University of Okla.	1934	Brooklyn, N. Y.
Morris, David Gordon	1903	—, Kan.	University of Okla.	1934	Oklahoma City, Okla.
Patton, Doyle Leroy	1905	Wooster, Oklahoma	University of Ark.	1932	Tishomingo, Okla.
Seyler, Lloyd Everett	1905	Butler, Penna.	University of Penn.	1931	Oklahoma City, Okla.
Shipp, Jesse D.	1910	Hugo, Oklahoma	University of Okla.	1933	Tulsa, Okla.
Simon, John Franklin	1908	Garner, Kan.	University of Kansas	1933	Alva, Okla.
Smith, Wendell Logan	----	Topeka, Kan.	University of Okla.	1933	Oklahoma City, Okla.
St. Peter, Montreville Alfred	1888	Pittsburg, Penn.	Univ. of Pittsburg	1910	Elk City, Okla.
Wallace, DeLoss Arnold	1902	Cedarvale, Kan.	University of Okla.	1934	Denver, Colorado
Waters, Floyd L.	1908	Maramec, Okla.	University of Okla.	1934	Oklahoma City, Okla.
White, James Halley	1906	Salt Lake City, Utah	University of Okla.	1934	Shawnee, Okla.
Winston, John R.	1908	McMillan, Okla.	University of Okla.	1933	Temple, Texas
Anderson, Haskell Reynolds	1907	Frederick, Okla.	University of Okla.	1934	Mt. View, Okla.
Blue, Johnny A.	1902	Ru, Texas	University of Okla.	1934	Oklahoma City, Okla.
Boswell, William Eugene	----	Leedy, Oklahoma	University of Okla.	1934	Henderson, Texas
Brady, Charles Joseph	----	Lake Geneva, Wis.	University of Wis.	1934	Lake Geneva, Wis.
Dunnington, W. Glenn	1910	Cherokee, Okla.	University of Okla.	1934	Cherokee, Okla.
Fry, Powell Everett	1910	Frederick, Okla.	University of Okla.	1934	Frederick, Okla.
Hargrave, Fred T.	1905	Locksburg, Ark.	University of Okla.	1934	Checotah, Okla.
Hardman, Thomas James	1910	Tulsa, Okla.	University of Okla.	1934	Tulsa, Okla.
Johnson, E. Ossip	1908	West Plains, Mo.	University of Okla.	1934	Tulsa, Okla.
Lively, Claude E.	1902	Woodard, Okla.	University of Okla.	1934	McAlester, Okla.
New, William Neil	----	Atoka, Okla.	University of Okla.	1934	Guthrie, Okla.
Nelson, James M.	1905	Doyles, Okla.	University of Okla.	1934	Marais, Minn.
Owen, Cannon Armstrong	1909	Magnolia, Ark.	University of Okla.	1934	Oklahoma City, Okla.
Parker, Warren Elmer	1909	Wadena, Minn.	University of Minn.	1934	Oklahoma City, Okla.
Robberson, Morton E.	1910	—, Okla.	University of Okla.	1934	Oklahoma City, Okla.
Smith, Haskell	1909	Dustin, Okla.	University of Okla.	1934	Hanna, Okla.
Spann, Logan A.	1905	—, Ark.	University of Okla.	1934	Tulsa, Okla.
Starkey, Wyane A.	1906	Martha, Okla.	University of Okla.	1934	Altus, Okla.
Taylor, John Robert	1905	Hugo, Okla.	University of Okla.	1934	Oklahoma City, Okla.
Vanlandingham, Homer W.	1905	—, Okla.	University of Okla.	1934	Oklahoma City, Okla.
Wolff, Eugene G.	1901	Waukomis, Okla.	University of Okla.	1934	Waukomis, Okla.
Zeigler, Joel	1900	Oakhurst, Texas	University of Okla.	1934	Shamrock, Texas
Zeigler, Paul	1909	Shamrock, Texas	University of Okla.	1934	Shamrock, Texas
Cantrell, David E.	1906	Banty, Okla.	University of Okla.	1934	Healdton, Okla.
Cantrell, Emma Jean	1907	Mounds, Okla.	University of Okla.	1933	Healdton, Okla.
Shelby, Hudson Swain	----	Savannah, Tenn.	University of Okla.	1933	Oklahoma City, Okla.
Waters, Claude Bryan	1907	Pawnee, Okla.	University of Okla.	1934	Mangum, Okla.

### The Use of Dilaudid in Gynecologic Surgery

From the Department of Obstetrics and Gynecology, Washington University, St. Louis, T. K. Brown and H. L. Kleine report on their experience with Dilaudid in gynecology with two hundred and twenty-five surgical patients (American Journal Obstetrics and Gynecology, Volume 30, pages 89 to 92, July, 1935). In each case, two injections of 1/130 gr. hyoscine were given. The first injection, one and three-quarters hours before operation, was combined with 1/48 to 1/32 gr. Dilaudid, the second injection was made one hour before the operation.

In part, the authors write, "As to the analysis of individual cases, it was found that complete analgesia and amnesia were obtained in eighty-three per cent of the cases, moderately good in fifteen per cent and poor in only two per cent. The action was more prompt with Dilaudid than with morphine, the patient becoming drowsy five to eight minutes after the first injection. The amounts of inhalation anesthesia were definitely decreased and the patients reacted sooner after the operation."

Dilaudid relieved pain as well as, if not a little better, than morphine and, of course, in much smaller doses. The action was more prompt with Dilaudid and the mental faculties did not remain dulled as long afterward. Dilaudid did not depress the patient as much as morphine. The patient was clearer, more cooperative in her nursing care, and better able to feed herself and take fluids. Less inhibition of peristalsis with Dilaudid than with morphine in laboratory tests has been reported. We found this to be true clinically, because there was definitely less distension when Dilaudid was used in place of morphine. Less catharsis was employed and there were no cases of ileus in the entire series. Vomiting was definitely decreased. We also noticed that the number of postoperative catheterizations was slightly decreased when Dilaudid was used."

Postoperatively, a rectal suppository of 1/24 gr. (0.0025 gm.) Dilaudid was found to be a very easy and efficient way to administer the drug. Pain was relieved within fifteen to twenty minutes and for considerably longer periods of time than when given hypodermically.

### Preputial Calculus: A Clinical Rarity

Norman R. Ingraham, Jr., Philadelphia, (Journal A. M. A., July 13, 1935), reports a case and points out that preputial stone occurs in those cases of phimosis, usually congenital in origin, in which the orifice for the passage of urine becomes so small that stagnation occurs in the preputial sac, distended by pressure of urine from the bladder. The anterior urethra becomes dilated, and the bladder hypertrophies and enlarges. Hydro-ureter may develop if the condition continues over a long period of time. Infection of the bladder, posterior urethra, epididymis and testicle may occur and urinary extravasation may result. Particularly in the presence of infection, the debris from which forms a nucleus, stagnation of urine is apt to result in the deposit of urinary salts to form calculi either in the kidneys, bladder or preputial sac. Those formed high up in the urinary tract are caught by the phimosed prepuce if they are carried downward by the urine flow, and the result is the same as though they were formed in the latter situation. The stones consist of organic matter impregnated with calcium or magnesium phosphate or urate, occasionally of ammonium salts or

uric acid. They increase more or less rapidly in size as successive layers are deposited. Veneral disease, by narrowing the outlet for urine flow and increasing the tendency to fibrosis, makes the formation of preputial stone more likely. If the case goes untreated, urinary obstruction of severe degree will sooner or later develop, which, without intervention, may give rise to the formation of a fistula. Chronic irritation has caused the development of cancer of the glans in at least one instance, and pressure atrophy of the glans is common. The diagnosis rests on the realization of the existence of such condition, and the treatment, without exception, is circumcision.

### Summer Diarrhea in Babies

Casec (calcium caseinate), which is almost wholly a combination of protein and calcium, offers a quickly effective method of treating all types of diarrhea, both in bottle-fed and breast-fed infants. For the former, the carbohydrate is temporarily omitted from the twenty-four-hour formula and replaced with eight level tablespoonsful of Casec. Within a day or two the diarrhea will usually be arrested, and carbohydrate in the form of Dextri-Maltose may safely be added to the formula and the Casec gradually eliminated. Three to six teaspoonfuls of a thin paste of Casec and water, given before each nursing, is well indicated for loose stools in breast-fed babies. Please send for samples to Mead Johnson & Company, Evansville, Indiana.

### Treatment of Trichomonas Vaginitis With Concentrated Salt Solution

Lazar Rosenthal, Leo S. Schwartz and Joseph Kaldor, Brooklyn, (Journal A. M. A., July 13, 1935), studied the action of hypertonic salt solutions on Trichomonas vaginalis. The fact that Trichomonas vaginalis is an extracellular parasite living free in the vaginal secretion made it possible to conduct the experiments in vitro. It was found that a twenty-five per cent salt solution made the phenomenon of inactivation permanent and irreversible. The parasites could not be returned to life when transferred to a physiologic salt solution. On the basis of these experiments we began to apply salt in the treatment of patients suffering with trichomonas vaginitis. Vaginal douching with a twenty-five per cent solution of salt was adopted. The patient herself at home can easily prepare an approximately twenty-five per cent solution by dissolving one glassful of salt in four glassfuls of hot water. The solution is used at body temperature. The douching is well tolerated by the vaginal mucosa and does not cause any irritation or discomfort. In nearly all of the fifty-six cases the relief was prompt after one or two daily douches. The itch disappeared, the discharge became scanty, thin in character and odorless, or even disappeared entirely, and the vaginal mucosa assumed a normal appearance. In thirty cases, no more live trichomonas organisms could be found after two or three douches. Twenty-four cases showed complete absence of live parasites after one week of daily douches to bring about the disappearance of the parasites. It is a known fact that, with every method of treatment, the trichomonas vaginitis has a tendency to recur after menstruation. In our series, during an observation period of eight months, the recurrence of Trichomonas did not take place in twenty cases after one month of treatment, in twelve cases after two months of treatment, and in sixteen cases after three months of treatment.



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Beckham.....	P. J. DeVanney, Sayre	C. F. Jones, Erick
Blaine.....	A. K. Cox, Watonga	T. A. Hill, Watonga
Bryan.....	C. G. Price, Durant	Jas. L. Shuler, Durant
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Kingfisher.....	B. I. Townsend, Hennessey	F. C. Lattimore, Kingfisher
Kiowa.....	J. W. Finch, Sentinel	J. P. Braun, Hobart
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McIntosh.....	F. L. Smith, Eufaula	Howson Bailey, Sulphur
Murray.....	F. E. Sadler, Sulphur	S. D. Neely, Muskogee
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Nowata.....	J. P. Sudderth, Nowata	C. M. Bloss, Okemah
Okfuskee.....	J. A. Kennedy, Okemah	Bert F. Keltz, Oklahoma City
Oklahoma.....	Rex Bolend, Oklahoma City	M. B. Glismann, Okmulgee
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Seminole.....	C. C. Whittle, Wewoka	D. Long, Duncan
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NOTE—Corrections and additions to the above list will be cheerfully accepted.

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### Preliminary Observations on Vitamin A Deficiency As Shown by Studies With the Visual Photometer

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The newspapers, radios, billboards, and even full-page displays in the medical journals advertise the virtues of vitamins until the average physician dismisses it all as a commercial scheme and thinks that there is not enough therapeutic merit in this much-discussed element of the diet to warrant his special consideration.

Numerous vitamins have been identified. They are so intimately related and so governed in their action by a number of factors prominent among which are the endocrine glands, that the combined efforts of research workers and general practitioners will be necessary to arrive at a complete knowledge of the role played by them in normal and pathologic states of human metabolism.

The major symptoms of marked vitamin deficiency are well known, but the possible effects of a slight or moderate degree of deficiency prolonged over a period of years is entirely unknown. It may be that permanent and irreparable damage to important organs may be produced by a prolonged or slight degree of deficiency in one or more of the important vitamins.

Theoretically a properly balanced diet should supply the necessary vitamins. However, in the present state of our knowledge it would be almost impossible to work out a generalized diet to cover the needs of all types of individuals and not leave a number deficient in some

vital element. This thought suggests the importance of the addition to diet of vitamin concentrate to assure an ample supply.

It is the purpose of this paper first, to show briefly the therapeutic value of vitamin A, in a number of pathologic states, and in seemingly healthy individuals. Second, to call attention to the use of the photometer according to the technic of Jeans, as a simple method to be used by the general practitioner for the detection of vitamin A deficiency, and for measuring response to vitamin A therapy.

The vitamin A medication used in the treatment of the cases described in this paper was carotene in oil.<sup>1</sup> Carotene is the plant pigment which gives the yellow color and vitamin potency to carrots, butter, cream and certain fruits and vegetables. It has been conclusively demonstrated that carotene is non-toxic.

When carotene (pro-vitamin A) is ingested into the system it is converted into vitamin A apparently by the action of the liver. Carotene is found in the blood stream and recently it was derived chemically from the visual purple of the rabbit's eye. Vitamin A is apparently largely stored in the liver and in smaller quantities in kidneys and other organs.

Vitamin A deficiency has been recognized in the past only when it reached an advanced stage, producing malnutrition. The most familiar form of vitamin A de-



iciency is xerophthalmia, rarely seen in America. Vitamin A deficiency may result from an inadequate intake of the vitamin in the food, from deficient absorption and storage of the vitamin as the result of intestinal or hepatic derangement, or from an increased metabolic consumption of the vitamin during periods of rapid growth or of disease. Especially during the course of severe infectious diseases, as for example, measles, mumps or pneumonia, the body either utilizes great quantities of this vitamin or the liver is prevented from manufacturing it.

Vitamin A deficiency apparently affects the epithelial tissues in a specific manner. Eustermann and Wilbur<sup>2</sup> note the following: "The pathological investigation of Wolbach and Howe, subsequently confirmed by various other investigators, shows that there is a substitution of stratified keratinizing epithelium for normal epithelium in various parts of the respiratory, alimentary and genito-urinary tracts, in the eyes and in the para-ocular glands; or, in brief, metaplasia of the greater part of the ectodermal leaf of the body. Such changes may be followed by infection in the various organs or tissues. Thus, the maintenance of intact, healthy epithelial membranes, which constitutes the first line of defense against bacterial invasion is a prophylactic function of this vitamin of the first importance."

In January, 1934, while seeking relief from repeated colds and sinus infection and also something that would build the resistance and stimulate the appetites of my two small daughters, I became interested in carotene as the source of a reliable and ample supply of vitamin A. For several months I studied the clinical results of the use of carotene in oil on the members of my family and on a large number of patients.

The appearance of an article by Jeans and Zentmire<sup>3</sup> directed my attention to the use of the visual photometer as a method for the determination of the amount of vitamin A in the human.

In August, 1934, following the technic of Jeans and Zentmire, I began to make tests for night blindness on individuals of various ages and with various disabilities. The majority of the tests reported

by Jeans and Zentmire were made on children in whom the presence of disease had been ruled out. On the contrary, my series included individuals selected at random varying from six to seventy years of age. The majority, however, were patients at Hines' Hospital, Hines, Illinois, and were under treatment or observation for certain disabilities. A second group was tested in a school at Muskogee, Oklahoma.

Jeans has shown that the test for vitamin A deficiency employing the visual photometer, hinges around the measurement of the degree of night blindness.

In the retina are the small rods which are sensitive only to light and darkness. Around these rods is deposited the visual purple (rhodopsin), a substance which is very sensitive to light and disappears entirely when it is exposed to very bright lights for any great period of time. After sufficient time has elapsed this substance is rebuilt by metabolic processes provided that the proper elements are present. Recent experiments have shown that pure carotene or pro-vitamin A can be separated from the visual purple of the eye of the rabbit giving rather definite proof that there is a close relation between the vitamin A supply and the ability to rebuild the visual purple of the eye following exposure to bright lights.

For a detailed description of the technic of these studies the reader is referred to the original article by Jeans and Zentmire. Briefly the test may be described as follows: The electrically illuminated Birch-Hirschfeld photometer manufactured by Carl Zeiss, Inc., was employed. The instrument consists of a metal tube with a light bulb at one end, and an iris diaphragm, a five-light-point disc and a Goldberg wedge at the other. The iris diaphragm may be opened or closed by moving a lever along a scale marked with the diameter of the opening in millimeters. The five-light-point disc is made of blackened metal and has punched out of it quincunx of the throw dice. The Goldberg wedge is marked with a scale of opacities, the numbers of which increase from one to thirteen.

The subject, looking at the photometer, observes the light as regulated by the

wedge and the iris diaphragm and transmitted through the disc. Light sensitivity is measured by the number of observed light spots in the five-point-light disc in relation to the diaphragm opening and the wedge opacity.

During the test the subject was seated comfortably in a chair. For five minutes a moderate illumination of the room was maintained. This was then replaced by a brilliant light (150 watt lamp) for a period of five minutes at the end of which time the light was turned off, and the initial reading made. A second reading was made at the end of a period of ten minutes of darkness. The test was found to be extremely simple, and repeated examinations spoke well for its accuracy.

I realize that this is a pioneer field of research and my observations are submitted with the hope that they may serve to direct the attention of the profession to the importance of an adequate supply of vitamin A in the diet of apparently healthy as well as frankly ill individuals. The observing family physician will teach his patients the proper dietary principles including the important roles played by the vitamins. It has been the lack of instruction on the part of the physician which has caused the public to turn to such agencies as radios and commercial advertisements for their information.

It is furthermore the alert family physician who has the opportunity of detecting early stages of vitamin A deficiency.

As stated above, my observations are only preliminary in many instances. Over 275 individuals have been tested from one to five or more times. The following cases are grouped according to their types.

#### NORMAL CASES

In this group there are over one hundred cases. The subjects who were working or going about their daily routine without a known important disability were classed as normal. There were two groups, one largely adult, the other principally made up of children.

A large percentage of these cases were found to be below normal in vitamin A content. Those who tested high were from small towns and their diet was liberal

and rich in vitamins or they had taken some vitamin A product for a long period of time. A few individuals full of vim and vigor and in apparently perfect health showed high tests.

From the results of these tests it would appear that a large percentage of men and women who work in institutions, offices and stores, especially in the larger cities, are deficient to a certain degree in vitamin A. This deficiency is caused by the fact that they eat irregularly, improperly and hastily; second, food in a city is often either over or under ripe, stale or overcooked, rendering the vitamin supply inadequate even if the proper type of food is eaten.

Women desiring to reduce leave out of their diet everything that is rich in vitamin A, and among this group are found certain of the most marked evidences of vitamin A deficiency.

From this study of normal individuals it would appear that every person who is not on a known light vitamin diet should take carotene or some similar vitamin concentrate. It would also appear that it would be economical for institutions, such as hospitals and schools to use vitamin concentrates to insure the vitamin potency of the food intake, thereby securing greater nutritional results. In a number of institutional cases tested, gain in weight was secured by the addition of carotene with no change in the diet. It has also been shown that many of the children under these tests improved in their school work and activity with the addition of known quantities of vitamin A to the diet.

The question arises concerning the minimal amount of vitamin A necessary to insure normal health, or what is the smallest amount that can exist in the human organism without resultant damage. It is reasonable to suppose that the growing child needs more vitamin A than the adult in proportion to weight, and it also appears that for maximal efficiency the adult requires a full supply.

The regular addition of vitamin A to the diet of every individual would be entirely harmless. In experiments using as high as seventy-five minims of carotene daily for a period of several months, no damaging effects were noted. In the majority of pa-



tients who were low in the photometer tests and who were given carotene for several weeks, showed an improvement of from one to three points as measured on the photometer.

#### GASTRO-INTESTINAL CONDITIONS

Nineteen known gastro-intestinal cases showed a marked deficiency in vitamin A. Some of these improved rapidly under carotene therapy while others showed no response. These results suggest that we have in the visual photometer, possibly another liver function test. Pro-vitamin A is converted by the liver into vitamin A and the liver stores a large part of the vitamin A in the human system. Anything that would interfere with liver function would stop the restoration or rebuilding of visual purple at a certain point. This was further proven by the fact that terminal cases of cirrhosis of the liver did not respond to large doses of carotene and would improve only to a certain point regardless of the amount of carotene taken. These patients, however, seemed to feel better while taking carotene and the appetite was increased. Any gastro-intestinal condition would be expected to hamper the efficiency of the liver and thereby retard the manufacture of vitamin A from the normal food intake or from large doses of carotene.

One interesting but as yet unexplained result of large doses of carotene was the change in the shape and consistency of the stool in a great many of the cases observed. Some patients who had spastic colitis found marked relief, others with diarrheas found that the stool changed to a normal one while taking carotene. Especially was this true in the diarrhea of diabetics. It is interesting to know that a number of these cases had previously taken other vitamin A products without any change, leading to the conclusion that pro-vitamin A has additional functions to that of vitamin A, either *per se* or through the synthesis necessary to change the carotene into vitamin A.

#### SINUS AND MISCELLANEOUS INFECTIONS

A large number of various types of infection were observed. All were uniformly low in vitamin A as demonstrated by the photometer tests. Some patients showed marked improvement under carotene

therapy. One patient who was studied over a long period of time following pneumonia showed an increased appetite and gained thirty pounds in weight. Infections destroy in some way the vitamin A supply of the system. It is a mooted question as to the relation of vitamin A to infection but it would appear that it is one of the factors that have to do with making certain tissues more resistant to infection. Children who had had some form of infection tested much lower, but the addition of carotene to the diet rapidly rebuilt the vitamin A supply in the system. In a small series of patients tested following attacks of measles and mumps the improvement in the test on the visual photometer was more rapid in the children who were given carotene. Some of the lowest tests on the photometer were re-encountered with children who had had measles or mumps. It might be well to consider measles more important than we have heretofore. The fact that pneumonia or other infections are more serious following measles than under ordinary conditions may be due to the disturbance of the vitamin A storage or mechanism by the toxin of measles. In septic infection, Moore<sup>4</sup> reported that the vitamin A content of the liver was much lower than in other types of cases which came to autopsy. It would appear possible, therefore, that if an intravenous or subcutaneous solution of vitamin A could be provided for use in cases of septic infection, promising results would be obtained.

#### REPORT OF CASE

P. R. M., a girl aged seven years, entered school for the fall term, 1934, in a markedly under-nourished condition. Members of her family were known to have had tuberculosis. The child failed to gain on the general diet of the institution. Along with a group of under-nourished children she was put on a diet containing an abundance of milk, cocoa and butter. The other children gained weight, but the patient failed to do so. She had a "runny nose," and showed very little interest in her school work. In March, 1935, she was given ten drops of carotene in oil, t.i.d. After a few weeks of this therapy a progressive gain in weight was noted, together with less frequent cold, and an im-

provement in play activities and school work.

#### NERVOUS AND MENTAL CONDITIONS

Only two patients in this group were studied but this type of case furnished a great field for worthwhile investigation as undoubtedly marked vitamin A deficiency plays some part in degeneration and derangement of the nervous system. One interesting case diagnosed as alcoholic neuritis, at the first photometric examination, could only discern the lights after the wedge was completely removed. The patient was helpless and was brought to the office in a wheel chair. After three months of a large dosage of carotene the man's vision had improved to three points on the photometer and he walked one-half mile for his test.

It would be interesting if a number of similar cases could be tested. Nervous irritability and restlessness were in many cases markedly relieved by large doses of carotene. This was especially true in deficiencies of long standing and in cases of chronic alcoholism. I believe that alcohol has a tendency to destroy the vitamin A in the system or to prevent its manufacture and storage by the liver due to the congestion which it produces. This opinion is based on the fact that autopsies show low vitamin A content in the liver of alcoholics and a number of the patients found to be vitamin A deficient by the photometer test had been drinking heavily for several days or had been on recent parties.

Another interesting observation was that in cases of hyperthyroidism, the lights on the photometer appeared to the subject to be fading and disappearing. This was true also of a case diagnosed as neurocirculatory asthenia.

#### KIDNEY CONDITIONS

Unfortunately only a few cases of this type could be tested. Those who had not been on a high vitamin diet showed vitamin A deficiency and improved rapidly on large doses of carotene. There has been quite a bit of interest recently in the possible etiologic relation of vitamin A deficiency to the formation of urinary calculi. The recent work of Higgins<sup>5</sup> would indicate that vitamin A plays an important role in the protection of the epithelial tissue of the urinary tract. The cases de-

scribed by Higgins improved on a high vitamin A diet. It has been suggested that high vitamin A diet be given to patients who have had kidney stones removed to prevent a recurrence. In some of the cases seen by the writer, who were not, however, tested with the photometer, there was a history of dryness of the hair and skin, night blindness and a diet low in vitamin A. Further studies in this interesting field must be made before it can be determined whether vitamin A deficiency plays the principle role in the formation of urinary calculi.

#### PERNICIOUS ANEMIA

Before the photometer was secured carotene was given to a large group of pernicious anemia cases, some showing symptoms of cord involvement. The entire group showed a marked improvement in appetite and where the dietitians formerly had to coax the patients to eat they had difficulty in supplying enough food while the men were taking carotene. Some of the cases with cord symptoms appeared to show a certain amount of improvement in the use of their limbs and made better attempts to walk. There apparently was no change in the blood picture from the use of vitamin A in the form of carotene. Rats made deficient in vitamin A by special diets in later stages show loss of use of the rear limbs, somewhat similar to that of cord changes in anaemic cases.

#### LEUKEMIA

Fifteen cases were examined in this group. All showed vitamin A deficiency with the exception of a few who had been taking carotene and a high vitamin diet prior to examination. Most of the cases tested improved with the use of carotene both symptomatically and as measured by the photometer. However, it was found that the number of white blood cells increased rapidly with large doses of carotene. It would, therefore, appear that vitamin A products should be given sparingly, if at all, to these types of cases.

#### DIABETES

Fourteen cases of diabetes were examined with the photometer. All were found to be relatively low in vitamin A. This group of patients showed a much higher percentage of gastro-intestinal disturbances than the average. In the reports of



Moore<sup>4</sup> the livers of diabetics examined showed high vitamin A content, indicating that diet is an important factor, especially a low carbohydrate diet. As mentioned above the diarrheas of the diabetics were controlled by large doses of carotene when all other forms of medication failed.

DISEASES OF THE CIRCULATORY SYSTEM

Eight cases of this classification were tested and all were found to be deficient in vitamin A. One young woman who had a diagnosis of coronary sclerosis, after large doses of carotene for a period of forty-one days felt much better and stronger. The night blindness of which she had complained was much improved and she was able to drive her car again without fear.

Other cases with marked cardiac damage improved symptomatically while taking carotene in large doses but of course such improvement was only temporary. Moore found in his examination of livers obtained at autopsies that those from cases of organic heart disease showed very low vitamin A content. It will require further study to determine whether or not this is due to the liver damage that follows or accompanies heart disease.

MISCELLANEOUS

Thirty-one subjects selected from the total series tested: This group of patients, in from six to forty-one days showed from one to three points improvement on the visual photometer after taking carotene in large doses. A large number approached normal in a comparatively short length of time after starting the carotene therapy. These results suggest that the vitamin A content of the system is increased rapidly by the use of pro-vitamin A or carotene. Also it would show that the visual photometer is an accurate yardstick by which to measure the amount of vitamin A that is utilized from the food intake. Further study checking and rechecking of data from a large number of observers will be necessary before the maximal dose can be determined. However, by means of the visual photometer the clinician is able to determine whether the patient is deficient in vitamin A, and by the use of large doses of carotene he can also determine whether the patient is able to assimilate or convert the ingested food into necessary vitamin

A content. Then by the addition of other vitamins and further tests the clinician can determine if there exists a deficiency in another one of the vitamins.

In certain cases tested who failed to respond to large doses of carotene, vitamin B, in the form of Brewer's yeast was added to the diet and a rapid response was obtained. One of these cases had known liver damage from an old amoebic dysentery.

These tests show that carotene has the advantage of not being toxic in large doses. A large number of cases were given as high as seventy-five minims of carotene or the equivalent of fifteen teaspoonfuls of cod liver oil in vitamin A content, over periods of three months with no signs of carotenemia or other symptoms of hyper-vitaminosis A.

The accompanying chart shows the re-

DIAGNOSIS: MISCELLANEOUS												
Age—Years	Reading when Admitted						Interval—Days	Reading when Discharged				
	Initial Reading			10-Min. Reading				Initial Reading			10-Min. Reading	
	Wedge Setting	Diaphram Setting	Wedge Setting	Diaphram Setting	Wedge Setting	Diaphram Setting		Wedge Setting	Diaphram Setting	Wedge Setting	Diaphram Setting	
38	3	12	4	12		8	4	12	5	20		
29	2	12	3	12		6	3	12	4	14		
37	3	6	4	6		10	3	20	6	20		
21	3	6	5	12		14	4	12	7	20		
28	2	16	3	20		6	2	12	4	20		
44	3	12	3	12		51	3	14	6	20		
26	2	12	3	10		6	2	12	4	10		
54	3	8	4	8		40	3	10	6	8		
18	2	14	2	20		7	2	14	3	12		
43	2	20	3	20		7	2	2	3	14		
35	2	8	3	18		28	2	20	4	20		
44	3	12	4	12		9	3	12	5	10		
44	-1	20	-1	20		30	2	12	3	18		
35	2	18	3	20		41	3	12	5	20		
55	3	20	4	12		18	3	12	5	6		
40	3	20	5	20		10	3	20	5	20		
52	3	18	4	12		8	2	8	4	8		
44	3	20	4	12		7	4	20	5	12		
32	4	20	4	20		10	4	12	5	12		
41	3	14	3	14		11	2	14	5	14		
53	3	18	4	8		7	3	14	6	12		
45	4	12	4	12		6	4	12	5	12		
58	2	18	4	18		4	2	18	4	18		
48	3	10	3	12		30	2	12	4	8		
42	4	20	5	12		7	4	20	7	12		
40	3	12	5	14		28	6	12	7	12		
42	3	12	4	12		15	4	12	6	12		
40	3	12	4	10		8	3	20	6	6		
35	1	20	3	10		26	3	12	4	20		
46	2	10	4	14		20	3	12	5	20		
42	3	12	4	12		15	4	12	6	12		

sults of photometric examinations in thirty-one cases selected from the total number studied. They were given carotene in oil. The resulting improvement in the majority demonstrated that the regeneration of visual purple is increased by the addition of carotene to the diet.

#### MARKED NIGHT BLINDNESS

Twelve patients with a severe degree of night blindness have been studied. Two of these have been observed over a period of six months. With large doses of carotene the visual purple of the eye has increased as shown by the photometric examinations. All of the patients with one exception have shown some improvement. For the most part the improvement has been gradual the improvement being about one point on the photometer each month. Two of the patients can again drive their cars at night with less fear.

As a result of questioning the subjects who have been examined it appears that there are individuals of all ages and circumstances who are unconsciously victims of night blindness. They take it as a matter of course.

The patients who complained of night blindness uniformly tested low on the photometer. No doubt a certain proportion of automobile accidents are caused by this condition coupled with visual defects.

#### REPORT OF CASES

*Case 1:* M. S., white, a male musician, aged forty-two, complained that he could not drive his car at night due to the irritation that the lights produced in his eyes. Since childhood he had studied music and from the history it was assumed that he had never eaten properly. At the age of fifteen he taught music as well as played, taking very little time for his meals. He ate sparingly, and particularly avoided vegetables.

The physical examination showed a fairly well-nourished, highly nervous man. The hair and skin were dry, and the eyes were markedly irritated. The heart, lungs, and kidneys, and the blood count were apparently normal.

The patient was very nervous and irritable; he paced the floor at night. He was placed on a diet rich in mineral salts and large doses of carotene in oil (twenty-five minims t.i.d.) were added. An improve-

ment of three points on the photometer resulted; the appetite increased and he slept better than he had in years. The deficiency state in this case was marked and had evidently existed over so long a period that recovery was slow, but at the end of six months the results were extremely gratifying.

*Case 2:* A woman, white, aged thirty-five, stenographer, had a condition which had been diagnosed as coronary sclerosis several years previously. Since that time she had been careful to avoid over-exertion. About six months prior to my examination she developed difficulty in driving her car at night. She was in constant fear of a collision, and finally gave up driving altogether.

Examination revealed no visual defects. The initial photometric test measured only three points. She was given large doses of carotene in oil for three months, at the end of which time her test showed six points on the wedge, and she was able to resume driving without fear. A small dosage of carotene has been continued, and no further difficulty in driving has been experienced.

#### CONCLUSIONS

Following the technic of Jeans and Zentmire, the visual photometer has been used in testing individuals of all ages and subjects of numbers of various diseases. There appears to be no doubt as to the accuracy of this test for the vitamin A content of the human mechanism. It has been definitely proven that carotene or provitamin A rapidly restores the vitamin A content in cases in which its activity is not hindered by disease or complications which serve to prevent its absorption and conversion. No bad effects have been noted from the use of carotene in oil in large doses. From the tests made covering people in every walk of life, it appears that a large percent of our population are low in vitamin A. There is no definite proof that vitamin A is anti-infectious but all results point to its action as a barrier against infection by stimulating healthy epithelial tissue.

Examinations of specimens of liver from three hundred autopsies<sup>1</sup> for vitamin A showed about the same results as found by the photometer in my series, the different pathologic states showing



the same proportionate deficiency as found by the photometer.

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## Cancer of the Skin

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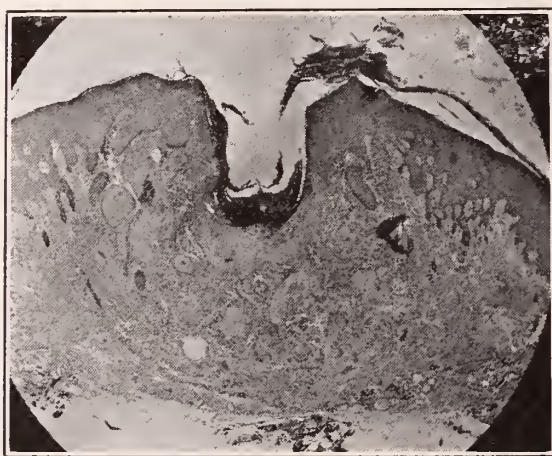
The skin as an organ is considerably the largest of the body, constituting approximately ten per cent of the body weight, while the liver, the largest gland, is normally about three per cent. Covered, as the skin is, with epithelium, and supporting huge numbers of complex accessory structures, it is scarcely surprising that epithelial abnormalities are far from rare. In bearing the brunt of physical contact with environment, the skin is subject to insult and trauma of a multiplicity of kinds—chemical, actinic, bacterial, mechanical—that is impressive in variety, and continues from birth to death. One may remark also the active reproductive

processes, evidences of endless cell divisions, in the growth of hair and nails, the secretion of fat, in which sebaceous cell bodies are disintegrated and reproduced, and the perpetual gradual exfoliation of horny substance from the entire surface.

This unceasing activity, wherein new cells are produced in remarkable quantities, throughout the entire span of life, and in an orderly manner, fills one with wonder and astonishment.

In the course of these mitotic cellular activities, subjected as the skin is to such an assortment of extrinsic influences, there occasionally occur, according to my interpretation, disturbances of reproduction that result in the occurrence of cells that are not normal. I believe that, for example, actinic irritation, which is notoriously a factor in the causation of skin cancer, does so by altering the process of cell division, so that true mutants arise, mutants which continue to reproduce, but are not responsive to whatever it is that keeps normal growth within normal bounds. If, in the course of myriads of epidermal mitoses, characteristics be so altered in only one instance as to produce a viable mutant cell unresponsive to normal restraints and capable of growing where normal cells do not grow, then a carcinoma might be started. The progeny of the one cancerous cell would constitute a colony growing parasitically, and with potentiality of ultimately resulting in death of the host.

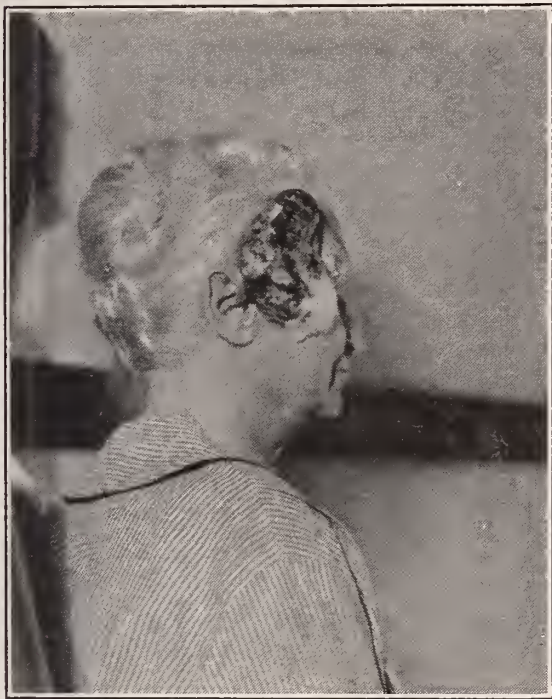
The concept of mutation of somatic cells in the explanation of origin of carcinoma is that of R. C. Whitman<sup>1</sup>.



1. Photomicrograph (x25) of small "wart-like" lesion from dorsum of hand. The abnormal epithelium is obviously invasive; individual cells are at this magnification seen to be larger and paler staining than normal, and manifest a marked tendency to group themselves in cornifying whorls. This structure in the gross is a bare fifth of an inch in diameter. Its improper diagnosis and inadequate treatment would mean death for the patient.

In presenting interpretation before observation, I am, scientifically speaking, putting the cart before the horse; but I wish at this time to start with the concept, then marshal the supportive evidence, and point out the correlation of theory with fact.

Since the researches of Thiersch<sup>2</sup> published in 1865, the continuity of cancerous



2. This huge vegetating, ulcerated, stinking tumor, soon to prove fatal, began as a tiny "wart" growth five years previously. It was treated by chemicals, later by excision, then by irradiation. Still later, after invasion of periosteum, cautery dissection proven inadequate. The old lady need not have died this way.

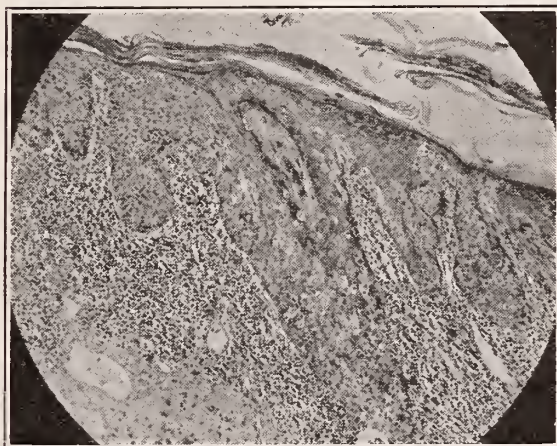
growths with the epidermis has been known, though the cell structure was interpreted as cylindromatous by Billroth<sup>3</sup> in 1866 and endotheliomatous by Koester<sup>4</sup> in 1867. Krompecher<sup>5</sup> in 1900 established the epidermal origin of rodent ulcer. Hansemann<sup>6</sup> had presented a theory of "anaplasia" as the cause, which Whitman<sup>1</sup>, with whom I agree, considers too vague a term. In view of the atypical mitoses, multipolar divisions, hyperchromatic and hypochromatic nuclei, asymmetric mitoses and changes in number of chromosomes, he avers that the cancer cell is "a new kind of cell, strictly and literally a mutated cell."

Broders<sup>7</sup> states that "carcinoma, regard-

less of etiology, is a primary disease of the epithelial cells, and all other phases and sequelae, though of great importance, are in reality of secondary nature." In his careful study of small epidermal anomalies, he shows convincingly that cancer may be diagnosed while still of a thickness only little greater than that of normal epidermis. In recent papers I<sup>8</sup> observed that small cancerous lesions may begin *de novo*, on previously unaltered skin, and that the earliest visible manifestations are circumscribed dyskeratotic lesions which progress by continuous evolution into large and destructive tumors.

Molesworth<sup>9</sup>, of Australia, has frequently pointed to the effect of sunlight upon the skin in the production of carcinoma. The lower lip is involved far more commonly than the upper because of its direction toward the sky. The dyskeratoses which become malignant occur on the exposed surfaces of sun-sensitive individuals; in my experience the vast majority of such patients possess florid complexions, bluish eyes, and generally light hair. Such so called "sailor skins" have been recognized for decades.

The condition is by no means limited to the aged, though the average age is high. Persons in their forties are not rarely sufferers, and I believe cases of xeroderma pigmentosum represent in reality the same thing. The preponderance of skin cancer in poorly pigmented individuals is true of other animals than the human.



3. Intra-epithelial carcinoma of Paget's type, from skin surface of lower lip. There are two kinds of epithelial cells present. One sees plainly the invasion and replacement of normal epithelium by abnormal. (x100.)



Findlay<sup>10</sup> observed 190 cases in about one million cattle slaughtered in four years in New South Wales. All but three of these were on partly or wholly white areas, and these three arose on the scars of brands. Roffo<sup>11</sup> successfully produced carcinomas in mice with ultra violet irradiation.



4. Bowen's disease. The individual centers of proliferation are unusually numerous. The centrifugal spread is apparent in the large circular patch. Ulceration and invasion have occurred in the large lesion between the scapulae.

Francis Carter Wood<sup>12</sup> points out that cancer grows best in healthiest tissue. This is what one would expect of tissue cells growing parasitically. He quoted M. B. Schmidt's experimental intravenous injection of cancer emulsions, which showed that only a small proportion of cancer cell emboli develop into metastases. But the fact that some do suffices to prove that one cell may constitute a cancer, for the isolated spherical culture of melanoma cells within a liver is as much a blastoma as the primary from which came the progenitor of the metastasis.

It is well known that many skin cancers develop from scaly spots. These lesions, of which Bowen's disease<sup>13</sup> is an example, are typically circular or oval, beginning small and spreading centrifugally, then eventually crusting, burrowing, in-

vading and becoming self-evidently malignant. Ketron<sup>14</sup> described several curious examples of epithelioma forming annular lesions which had also begun in a small area, spread, then developed incrustations. Intraepithelial carcinoma, now a well recognized entity, possesses this same habit; cases have been described and discussed by J. R. Fraser,<sup>15</sup> W. Freudenthal,<sup>16</sup> J. Jadassohn,<sup>17</sup> Borst,<sup>18</sup> and Hamilton Montgomery<sup>19</sup> among others. Many senile keratoses have the structure of Bowen's disease, as Montgomery<sup>19</sup> states, a fact which my observations fully corroborate. Fraser<sup>15</sup> aptly remarks, "the cells in the Bowen lesion have already undergone the changes of malignant neoplasia." I shall present photomicrographs demonstrating the histologic evidences of intraepidermal neoplasia; it will not be necessary to invoke hearsay evidence of these facts. What is desirable, is to note that this early intradermal centrifugal spread of carcinoma is consistent with the hypothesis of a one cell origin, the progeny of the one cell growing where they can grow, spreading within the epidermis, following the epithelium of the hair follicle, evoking a round-cell response in the dermis, then growing into this looser inflammatory tissue as into a culture medium.

Malignancy in the cellular sense depends upon rate of growth, as I have written elsewhere,<sup>8</sup> and as J. C. Mottram<sup>20</sup> shows in his study of tar cancer. It is incorrect to allege that a lesion is simply benign or malignant in the strictest sense; it is either not neoplastic at all, or it is little, somewhat, quite, or very malignant, in accordance with its time rate of capacity for doing harm.

All arsenical keratoses, by some called precanceroses, along with a host of other histologically independent lesions, possess a degree of malignancy in this rather mathematical sense. As Franseen and Taylor<sup>21</sup> show, about one-third of arsenical cancers are basal-celled, not being all squamous in character; but they all start as keratoses, though not all the keratoses possess enough *vis a tergo* to proliferate into ulcerative tumors. X-ray produces fairly comparable lesions. The scaly pigmented spots upon an irradiation atrophy are indistinguishable from senile

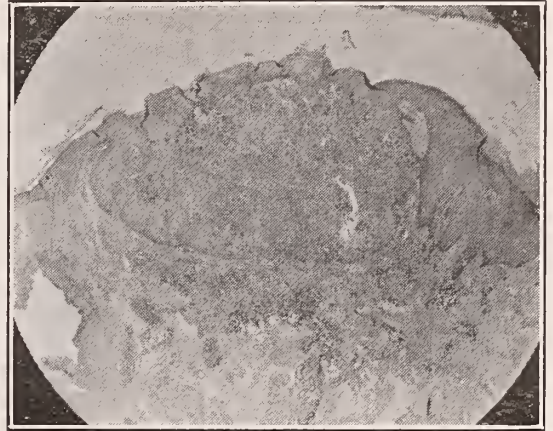
keratoses. One notes, as Whitman remarked, that all agents predisposing to cancer are those that are known to affect cells through their reproductive mechanism. I believe each keratosis represents a colony of progeny of an altered cell, a somatic mutant. The colony may be vigorous or weakly, malignant or abortive, hearty or sickly, and so productive of tumors or asymptomatic. Perhaps a large proportion of mutated cells are nonviable and never give rise to naked eye lesions at all. Nevertheless, this theory is consonant with the facts, whatever belief it may be your pleasure to hold.

The blastomatoid changes that I stress as features of an early skin cancer have been observed and recorded in the epithelium of the uterine cervix, also squamous, by Schmitz and Benjamin,<sup>22</sup> and by Schmitz, McJunkin and Macaluso.<sup>23</sup>

The gross manifestations of cancer of the skin are too familiar to dermatologists to require more than passing mention. I would point out that a split pea-sized, waxy discoid lesion, not yet ulcerated but enlarging, is as truly a basal-celled epithelioma as one which has evolved into a cell colony of such size that its central portions receive inadequate nutrient, necrose, slough, and produce the central crust which is so characteristic of the rodent ulcer.

I will discuss treatment only to the extent of describing our practice. We have used radium many years and know its properties, potentialities, and what one may expect as well as one may know the automobile he handles daily; and we have discarded it as a curative agent in favor of the actual cautery. We routinely dissect out the lesions with the hot iron, going around the periphery through normal tissue, and beneath. The extent is determined as much by palpation as by sight, though stretching the skin and viewing the lesion with light suitably reflected from it, is very satisfactory. The excised tissue is examined microscopically. Sectioned through the middle, it is at once apparent, using low magnification, whether the margins are safe on both sides and beneath. It has been our experience that, when the microscopic evidence is clear with respect to total removal of tumor cell colony, recurrence has never oc-

curred. The wound of such a burn sloughs, granulates, and heals in twenty-four to thirty days, and small doses of radium soften the cicatricial tissue so that the cosmetic end result is entirely satisfactory. The great satisfaction in this method of procedure is that one does not guess, or worry about the effect of differential necrotizing doses of irradiation upon normal



5. A minute nodule from the cheek, showing intra-epithelial growth of a colony of cancerous cells. The hyper-chromatism and variation in cell size and arrangement are seen even at low magnification (x40).

and abnormal tissues; when the operation is done, the tumor is in the bottle, and the patient gets well and stays well. I speak, of course, of tumors which have not as yet metastasized. As Everett Lain<sup>24</sup> pointed out in 1920 in a report of 122 cases involving the lip, treatment must be individualized, and not routine, and a lesion distorted by poor treatment, or a recurrent one, offers at best doubtful or bad prognosis.

Intraepithelial lesions may be satisfactorily blistered off without damaging the derma, and so heal in ten days with no scar at all. Those experienced in the effect of radiation on intraepithelial lesions, know that resultant atrophy is usually apparent, and pigmentation and scaliness regularly recur within ten years, not invasive perhaps into the homogenized connective tissue of the altered atrophic corium beneath, but present nevertheless as an unhappy reminder that perfection has hardly been achieved.

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## Some of the Causes Why Infants Are Removed From the Breast With the Idea That Mothers' Milk Is the Offender\*

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All animals, with the exception of the calf and the human infant, remain on the breast until they are old enough to be weaned. The calf has the advantage of the infant, however, for after it is weaned and taught to drink from a pail it will get its natural milk. The fat may be removed but as the calf learns to eat much earlier than the infant that is not so important. If the infant was only removed from the breast due to organic conditions of the mother, such as tuberculosis, cardio-renal, epilepsy, insanity, cancer, and some of the acute infectious diseases, there would not be so many factories specializing in the making of the various types of food for infant feeding. In going through my files I find that babies are removed from the breast for other causes than these maternal conditions mentioned. The condition, as a rule, was within the child itself, and if the mother would have had patience he would have done as well and better on the breast milk than he did on the bottle, in the majority of cases. What is the indication that the baby is not thriving on breast milk? The infant is not gaining its six or eight ounces per week. A baby should not be removed from the breast if he is not gaining more than four

ounces per week. That is, if he is doing well in every other respect. I took one baby from the breast because he never gained more than four ounces a week, and on highly concentrated food this baby never did gain more than this amount, but was perfectly happy and healthy. So with that one experience I insist that the baby should remain on the breast unless there is a definite reason for removing same. As a rule the mothers think the breast milk is not agreeing with the infants, causing the babies to cry incessantly, when the following are the exciting causes: First, the nervous, irritable baby. This may be sub-divided into Innate Traits, Birth-Shock, Calcium Deficiency, the Allergic infant, Pyloric-spasm, Hyperacidity, and the Colicky baby. Then we have Otitis Media, Syphilis, and Tuberculosis.

### NERVOUS IRRITABLE INFANT

Under the first type the nervous irritable infant as a whole has a nervous background. The infant received one-sixteenth of its traits from its grandparents, making one-fourth; one fourth from each parent which makes one-half; and one-fourth from remote ancestry combined, forming the entire plasma cell from which the infant develops. The infant at birth has three predominating traits, love, an-

\*President's Address, Oklahoma Pediatric Society, Oklahoma City, May 13, 1935.

ger, and fear, which are innate, but I feel in many cases unstable nervous systems can also be combined with the innate trait of fear. The mother is sure her milk is not agreeing with her child because it cries eighteen hours out of twenty-four. In this instance the breast milk would be ideal. There is no artificial formula alone that is going to be suitable for this nervous, irritable infant. We see so many of this type that we think it might be a condition heard of a few years ago—Calcium Deficiency. But after doing several bloods for the determination of Calcium and Phosphorus and finding them normal or above normal, and then making inquiries at several children's hospitals and learning that their findings correspond with mine, in other words, normal, I wonder how much truth there is in some of the literature that we read and particularly that which is put out by the pharmaceutical houses.

#### ALLERGY TO MOTHERS' MILK

After you have satisfied yourself that this irritability is not due to Calcium Deficiency we then think of the Allergy to mothers' milk. This again has not been as satisfactory with me as some of the literature claims. No doubt it may play a part with some infants but with many it has been as unsatisfactory as the Calcium and Phosphorus Deficiency. I have only had one infant that I felt was truly an Allergic type. He was taken from the breast and tried on many artificial milk formulas with no success. The infant continued to cry regardless. I then happened to think of a food which most of us condemn and when made into the formula contains a very small amount of cow's milk. Then in its preparation—evaporation—the proteins are supposed to be changed, making a less sensitive milk for these allergic types. This is Eagle Brand Milk. As soon as this particular infant was placed on Eagle Brand Milk he was an entirely different child. Instead of crying eighteen or twenty hours a day, he slept twenty-two.

#### BIRTH SHOCK

There is another condition that is more probably the cause of this nervous irritability than Calcium Deficiency or Allergy, and that is birth-shock. These infants as a rule start to cry shortly after

birth and continue to cry night and day until they are several months old. They have no signs or symptoms of birth injury other than their irritability with their continuous crying. They continue to gain on mothers' milk, but a baby that cries incessantly can not be expected to remain on the breast more than a few weeks. And when they are removed from the breast they continue to cry regardless of the type of the artificial food. This is one of the most aggravating conditions to all concerned. The household gets no rest or peace and are kept under a nervous tension, and the doctor builds no reputation if the infant continues to cry regardless of the change. There is one thing to remember if he is compelled to remove this infant from the breast—the artificial food should not be reduced in quality or quantity and should always have sufficient calories to maintain proper growth and development.

#### HYPERACIDITY

Another condition under which the baby is removed from the breast is hyperacidity. This infant resembles the nervous, irritable child in many ways, and is just as nervous, cries just as much, and it also has a frequent, curdy, acid stool. He has more hydrochloric acid than combines with the mother's milk, leaving a free acid which passes out of the stomach causing a rapid peristalsis of the intestines resulting in frequent, mucous, curdy, acid stools which burn and extortiate the buttocks. This type, while nursing, will let loose the nipple and cry out in pain. He should remain on the breast with the addition of an ounce or two of protein milk given before each breast feeding, which combines with the free acid overcoming the rapid peristalsis and the result is fewer B.M.'s which are thicker in character.

#### COLICKY BABY

The true colicky baby must not be confused with the Nervous Irritable, the Hyperacidity, or the Hungry Baby. It is a native urge for a baby to cry when he is hungry. If the mother is not giving a sufficient amount of milk to satisfy this urge, all that is necessary is to give him a supplementary feeding and if the baby goes to sleep we may be quite sure the crying was due to hunger. But if you have an



infant that starts to cry at a certain time of day or night and continues for a few hours and is gaining and sleeps all the time except at this crying period, you can be sure that this is a true colic type and will be demonstrated on the breast or any artificial food. However, many infants are removed for this cause only, for the mother to find out that there is no improvement when placed on the artificial food.

#### PYLORIC SPASM

With pyloric spasm the infant is often removed from the breast and given artificial food with no better results than before mentioned. The character of the vomiting is the same as that of Pyloric Stenosis, but in the Pyloric Spasm there is not such a rapid loss of weight as in Stenosis. As these Pyloric Spasm cases have a nervous background they are quite cross. These cases will do better on mother's milk with the proper medical treatment than they will do on artificial food.

#### OTITIS MEDIA

With Otitis Media the infant may be very cross with vomiting as of the Pyloric Spasm type with a normal temperature. Unless one is very cautious and makes a routine examination of all infants' ear drums this condition may be mistaken for Pyloric Spasm which I have done in one or two cases.

#### CONGENITAL SYPHILIS

Infants with congenital syphilis may be restless and fail to gain in weight. The baby is removed from the breast on this account. Syphilis should always be considered with this type of infant.

#### TUBERCULOSIS

An early symptom of tuberculosis in infants is irritability, and this is particularly true of the meningeal type. With the bronchial or pulmonary types the symptoms may be slight fever and no gain in weight. With infants it is generally not hard to locate the contact and then the P.P.D. Interdermal test generally cinches the diagnosis. Many babies are removed from the breast for convenience sake, and more probably for this reason than where it is necessary from some cause or condition of the mother. I try to impress upon these mothers the importance of breast milk, telling them how important it is

considered in infant hospitals where it is kept and given only to the sickest infants. Without this mother's milk in the infants' hospitals many more of the children would die. And then, too, mother's milk is worth twenty-five cents an ounce to outside infants, where the total day's feeding costs from five to ten dollars. Why is it not just as important to their own babies? The value of the human milk presented in this manner quite often influences the mother to retain the baby on the breast. May the time come before a baby can be removed from the breast that it will be necessary to call in two other disinterested physicians as consultants. By so doing there will not be so many babies put on artificial food and it will also reduce the infant mortality during the first year of life.

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#### Action of Mercurochrome and Other Drugs on Normal Human Skin and in Infected Wounds

Justina H. Hill, Baltimore, (Journal A. M. A., July 13, 1935), confines her paper to the presentation of additional material in regard to the bactericidal and bacteriostatic action of mercurochrome and other drugs on skin and in wounds. This involves certain carefully limited comparisons and the use of new methods. The subject matter is limited to new material for which she is personally responsible. She finds that there is urgent need for standard methods of studying the in vivo action of antiseptics for special uses. Methods are suggested which, on further refinement, might serve as bases for such standards. In regard to the action of antiseptics applied to the skin, it is shown that: 1. Under conditions of practical use no antiseptic studied can invariably sterilize heavily infected skin. 2. Aqueous solutions of antiseptics are not as a rule suitable for preoperative skin sterilization. 3. Both the two per cent tincture and two per cent aqueous mercurochrome solutions are bactericidal and bacteriostatic on human skin. The two per cent tincture of mercurochrome is superior to the aqueous solution on the skin. Only the tincture has been advocated for preoperative skin sterilization. If comparisons are to be made between the bacteriostatic actions of preparations of iodine and mercurochrome on the skin, the order of efficacy, according to the results of the experiments, is as follows: the two per cent tincture of mercurochrome; the seven per cent tincture of iodine, not removed with alcohol; the two per cent aqueous solution of mercurochrome, and then the seven per cent tincture of iodine, removed with alcohol. It is shown that it is improbable that a single application of any known antiseptic will sterilize a heavily infected wound. There is evidence that while both the tincture and aqueous solutions of mercurochrome are bacteriostatic in heavily infected wounds, the aqueous solution, under the conditions of the tests, is superior to the tincture of mercurochrome and to the other antiseptics tested, in that it keeps the bacterial count lower and does not interfere with phagocytosis.

# Personal Experiences With Prostatic Resection\*

HENRY S. BROWNE, M.D.  
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It is with some diffidence that I discuss a subject which has been written about by many men with much more experience than I have had. The early literature gave the impression that prostatic resection, while somewhat technical, was practically devoid of discomfort or danger to the patient. The potential dangers, and they are ever present, were barely mentioned, if at all.

In my first thirty cases, five resulted in temporary, and one in permanent incontinence—in a case of malignancy who has since died. This, I finally realized, was due to the fact that while the cut was being made, the sheath would creep outward unless it was firmly held, and I have had no such cases since. I have later cystoscoped four of these men and in each instance the verumontanum had been shaved off. High post-operative temperature was the rule, though typically the pulse rate remained below ninety and the patient's general condition was good. The sixth patient died in three weeks from a septic condition, caused, I believe, by resecting too deeply and getting through the bladder wall. One developed a high temperature as soon as the retention catheter was removed, which lasted a week. Cystoscopy has since shown that the entire trigone nearly through the bladder wall had been resected. The prompt reinsertion of the catheter without a doubt saved his life.

I, therefore, developed an early and lasting respect for this procedure, and realized that the more equipment one had the better off one was. This includes various examining telescopes and duplicate operating parts with the new telescopes which give far better vision than the original operating telescopes. I had done thirty cases before I felt reasonably sure of where I was working at all times. In spite of the mishaps above described in my

early cases the results were good enough and the post-operative course so superior to that of prostatectomy, that I was encouraged to continue and my results are getting better and complications less all the time as I become more and more familiar with the procedure. I have done ninety resections and in the same period two prostatectomies, because I could not introduce the instrument into the bladder. I am, therefore, one of those who believe that resection is applicable in practically every case of prostatic enlargement.

The same preliminary care must be taken in building up the patient as for prostatectomy. I have been able to drain all of my patients with a retention catheter that did not already have a suprapubic tube. There is so little post-operative disturbance that I take chances on operating on patients who are grave risks. I however, draw the line on recently decompensated heart cases, as two of my deaths were due to cardiac failure. Low spinal anesthesia has been used in practically every case. The retrograde telescope has shown that in almost every case both median and lateral lobes have been enlarged intra-vesically with one or the other predominating. The operation consists of coring out the posterior urethra by removing all of the prostatic tissue which projects into the bladder and urethra, care being taken to keep the verumontanum inviolate, as by so doing the external sphincter is not endangered. Pieces of tissue which fall back into the bladder must be removed or they may interfere with urination when the retention catheter is removed. Bleeders are sparked as they appear. The retrograde telescope is invaluable in showing up any projecting pieces that may remain, when you think you have finished.

The post-operative care consists mainly of forcing fluids and keeping the catheter open. There is usually a slight rise in temperature for two or three days, and there

\*Read before the Oklahoma State Medical Association Annual Meeting, Oklahoma City, May, 1935.



is practically no pain or discomfort. The catheter is removed in seventy-two hours, or twenty-four hours after the temperature returns to normal. The patient is allowed up on the same day and voids freely and easily. There is usually some burning, and frequency for a week or longer, but as healing takes place this disappears. The average stay in the hospital has been eight days. I have long ago quit trying to get them out in a hurry. Out of town patients are kept in town for another week, because one death was from hemorrhage on the ninth day after the patient had returned to his home, and another patient died one month later with a septic temperature. I believe I could have saved him in the hospital with proper care and a retention catheter, but he refused to return. There was one case of hemorrhage four hours after operation which was controlled without much trouble. Except for these two, bleeding has not caused any difficulty.

I had three cases of epididymitis in the first thirty cases, a very troublesome complication. Since then I have done a routine vasectomy at the time of resection in all but the younger and more vigorous. There has been no case of epididymitis from a retention catheter. A periurethral abscess occurred once following the forcible dilatation of a large calibre stricture in introducing the instrument. I have since obtained a smaller sheath and loops to fit, if another such case arises. Four patients had prolonged septic temperature lasting up to four weeks. General measures plus a constant indwelling catheter aided their recovery. There have been six deaths in ninety resections, five of which have been recounted above. The sixth was a grave risk with advanced cirrhosis of the liver and nephritis. Anuria developed and he died three days after operation. The youngest man was thirty-one and the oldest ninety-three. One was ninety and six in the eighties. There were no deaths in these cases. The great majority were, of course, between fifty-five and seventy-five. One was unsuccessful due, no doubt, to insufficient removal of tissue, and was not re-operated. Eight have had a second resection, six months to two years later; six of these were in my first twenty cases and due to the fact that not enough tissue

was removed the first time. I console myself with the thought that that was far better than to have removed too much. I have been able to keep track of the majority of these men, and the results show the urinary stream to be consistently good, no residual urine in most of them, two ounces being the greatest amount. They get up not at all or only once at night, three having to get up three times.

I am thoroughly convinced that prostatic resection is the answer to an old man's prayer. The easy convalescence and almost complete lack of post-operative discomfort still amaze me. It will accomplish all that prostatectomy ever did and leave a man with his prostate. When done correctly the results are uniformly excellent and one such operation will convert the most confirmed prostatectomist into an ardent resectionist. The poor results and enormous mortality of some men have given the procedure an undeserved bad name in certain quarters. It is one of the most delicate, difficult and technical operations in surgery and when done properly it is followed by brilliant results, but when done improperly is fraught with the gravest dangers to the patient. The resectoscope is a marvelous instrument, but it can become a deadly weapon. Any man who has done prostatic resection and condemns it, thereby convicts himself of being unable to do it properly.

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#### DISCUSSION

*Dr. R. H. Akin:* This is a mutual problem, and I shall not touch more on the details, but it is a mutual problem that lies between the attending physician and the urologist. There are several reasons for a paper in connection with this, and it is my purpose to tell how the physician can make it much easier for the urologist to carry out his work. There are three reasons for failure. The first is the introduction of infections into the bladder, strep, staph, or the very persistent type of colon bacilli. Second, the inadequate or inaccurate removal of obstructing tissue. This part of the problem is the urologist's part. He must have an adequate type of equipment and skill before he performs the operation. Regarding infection, the man who first sees the patient at home, if he uses sterile technique in the introduction

of catheters, can do much to prevent infections. This is especially true where catheterization has to be done once or twice a day. Dr. Rose of St. Louis perhaps should have more credit in his study in connection with the continuous urethral catheter. A continuous urethral catheter has much the advantage of repeated introductions. If the patient does not have to be catheterized and you can estimate the obstruction which is causing retention of the urine, it is well for you to send that patient in to your urologist and have him visualize it. It may not be a case for resection. It may be a case for prostatectomy. However, he can tell whether or not it is early malignancy. If you don't get the patient in time to resect that and give him the benefit of deep x-ray therapy, it will be too late. My third point is in connection with hemorrhage. In old men small transfusions of properly matched blood are a great advantage.

*Dr. Halsell Fite:* I want to commend Dr. Browne for this paper, because he has been very frank in admitting the trouble he has had. He really wrote a learned paper in which he tried to explain to the general practitioner the general status of this procedure, in a very unbiased way. I think the earliest men in popularizing this method of removal were just a little bit too enthusiastic about it. They made it appear to the general surgeon and everyone that this was a procedure in which the patient could just run right into the office and the urologist could take out his instruments and cut out the prostate and send him home. I have had two or three men come to me with that idea, that they could go home the same day. This is definitely not a procedure for the general surgeon, but for a trained urologist. You can't do it yourself, I don't believe; I think your mortality will be astounding. I think probably a trained urologist can accomplish fair results. Resections are done in patients where a prostatectomy is absolutely contra-indicated. I consider we save the patient the cost both in hospital and medical care; I consider we also save him time, and there will altogether be less shock and suffering to the patient in the long run.

*Question:* Is it possible to treat a car-

cinoma this way with any degree of success?

*Dr. Browne:* I want to thank Drs. Fite and Akins for their discussion. As this procedure becomes more known to the general public, it is the early cases we are going to get, and in these prostatic resections the patients hardly know they have been operated on. We used to put them off and tell them they were not bad enough to be operated upon when we were doing prostatectomies but with this we can go in and resect the prostate with very little discomfort to the patient. About the question of carcinoma, resection is excellent in restoring the urination. You resect them and they will go on six or eight months urinating in good fashion and thus their last days will be made more comfortable. You can give deep x-ray therapy or radium along, but you can make them comfortable by re-establishing the urinary function for a number of months. I have the utmost respect for this procedure. That loop will cut, and just remember, it will cut clear through the bladder wall or through the urethra if it cuts in the wrong place. You should know where it is at all times, or your patient will be dead or worse off than before operation.

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#### THE OKLAHOMA CITY CLINICAL CONFERENCE

On the front cover page of this issue is an announcement of the meeting of the Oklahoma City Clinical Conference to be held November 4, 5, 6, 7, and the names of the sixteen distinguished guest lecturers indicate another very interesting and instructive program as the list is composed of men of international reputation in their respective lines.

The post graduate symposia presented by the doctors of Oklahoma City cover a large field of very important subjects and will be ably presented.

The social features include the President's dinner given by the Oklahoma County Medical Society for the President of the American Medical Association, Dr. James S. McLester. This will be held Monday evening. The annual Clinic dinner will be held Tuesday evening, a public meeting Wednesday evening and the annual Clinic Smoker, following the public meeting, all promise excellent programs.



# Reducing the Mortality Rate in Cases of Perforated Appendices\*

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A pre-eminent fact is that all of us have been seeing many cases of acute appendicitis with perforation, resulting in local peritonitis, appendiceal abscess, general peritonitis, and numerous other complications and sequellae.

In our particular location, we believe that the following are important factors as causes of delay in seeking proper surgical attention, resulting in most instances in perforation:

1. Delayed medical attention due to experts in "home treatment."
2. Failure of early diagnosis.
3. Failure of the family physician to properly impress the patient and relatives with the risks of trying to avoid operation.
4. Belief that the treatment of appendicitis is medical, particularly by purgation, on the part of some practitioners.
5. Fear of the anaesthetic or operation on the part of the patient.
6. Belief by some practitioners that the operation is a greater risk for the patient than the disease.
7. Difficulties in transportation because of weather conditions and roads, as we draw from within a radius of forty-five miles.
8. Among thrifty, honest people the present economic situation results in delay, as they hope that an operation will not be necessary.

One or more of the above reasons have been given to us at one time or another.

We do not feel presumptuous in saying that delayed hospitalization and purgation account for ninety per cent of the mortality

in appendicitis. Eventually, education will reduce this immeasurably, but until such time our efforts must be directed toward the handling of these cases in such a manner that the mortality attributable to the operation, the surgeon, his judgment, and post-operative management will be cut to the minimum of the uncomplicated cases.

It has been said that when the operation is completed the patient's fate is sealed. We have not subscribed to this belief. A chance remark by a colleague concerning a probable reduction in our mortality rate in perforated cases during the past ten years has led us to analyze our cases, and with the exception of the addition of two surgical procedures, our operative technique has been a constant factor. Our post-operative management has changed greatly and it is to this that we attribute our progress and improvement in the mortality rate of these cases.

We believe that, in addition to colpotomy drainage and appendicostomy, the following procedures are of extreme importance: (1) Intravenous fluids, (2) duodenal drainage, and (3) administration of morphine and pitressin.

In the years 1920-1925 we operated 455 cases in the above category and there were seventy-nine deaths, a mortality rate of 17.3 per cent. Among these there was one death from pneumonia and one from pulmonary embolism. These were treated by drainage; twenty-four had jejunostomy and an haphazard administration of fluids, and limited irregular use of morphine.

From 1925 through 1933, we operated 368 cases of perforation with thirty-five deaths, a mortality of 9.5 per cent. All of these had appendicostomy and sixteen females had colpotomy drainage. Jejunostomy was resorted to in eleven cases, a de-

\*Read before the Surgical Section, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, May, 1935.

crease of 2.3 per cent. In reviewing this period, particularly the first years, distention was not adequately controlled, fluids were administered inconsistently, and morphine was not used judiciously.

Thirty-six cases have been operated upon from January, 1934, to April, 1935, with two deaths, a mortality of 5.5 per cent. No jejunostomies have been done. Our operative technique has been the same, but we have administered fluids, used duodenal drainage, and have administered morphine and pitressin consistently, as outlined below, in a definite, purposeful manner. We appreciate the fact that such a small series of cases does not present a basis to form definite conclusions as yet.

If an enterostomy is to be done, the ideal time to do it is at the time of operation and not wait until the patient is moribund and use the measure as a last resort. By its use, the general abdominal distention may be relieved, but the tube soon drains only the immediate region of its insertion, as the remainder of the intestinal tract has become parietic from thrombosis, and the toxemia, the result of the absorption of split proteins, finally overwhelms the patient. Appendicostomy as a prophylactic measure is very much more effective than enterostomy undertaken late to relieve symptoms arising from a pathology already beyond mortal control. In addition, in female patients, the cul-de-sac is drained by rubber tubing through a colpotomy.

Since 1925, the above procedures have been the only addition to our operative technique. In respect to the appendicostomy we have been using the following procedure. The appendix is identified and removed, a number 12-14 French catheter is passed through its opening into the cecum and if possible, through the ileocecal valve into the ileum, and is fastened through the appendiceal stump with catgut.

This provides drainage and decompression of the lower small bowel and a portion of the colon. Through it normal saline is given in repeated small doses and is no insignificant factor in maintaining the water, acid-base and electrolytic balance.

In the past, it has been generally understood the cases developing a fecal fistula resulted in a lowering of the mortality

rate. We did not adopt this procedure to that end, but from observation in the Hochenegg Clinic at Vienna. It is simple, is done with a minimum of manipulation and trauma and is physiological in its action. It can be removed from the fifth to tenth day and in our cases we have had no persistent fistulae.

Post-operative distention may subside spontaneously, but where it increases, or even does not subside, we have a dangerous situation; but one where relief of a symptom will relieve the cause. When intra-intestinal pressure reaches approximately sixty mm. of mercury, complete block of the circulation of the jejunum and ileum will result. A less acute distention will cause some impairment on the venous side of the circulation. In ileus there is a dysfunction of the water balance control mechanism and an accumulation of fluid in the small bowels this fluid making up a considerable portion of the distention. This can be relieved by removing the excess fluid in the small bowel.

While the patient is still anaesthetized we pass about seventy cm. of a lubricated Levine tube through the nose into the stomach. This allows the sufficient tubing for the end to be carried into the duodenum by peristalsis. This is secured in position by two adhesive strips fastened to the cheeks. By doing this before the patient reacts from the anaesthetic we have anticipated and prevented post-operative nausea; we have evaded any reluctance on the part of the patient or any psychological barriers that might develop regarding swallowing and retaining the tube. Gagging and the induction of vomiting with its committent strain have been prevented. A patient awakening and finding the tube in place is usually satisfied to allow it to remain.

This tube is allowed to drain into a bedside bottle. It is irrigated every two hours to maintain patency and suction is applied at similar intervals by means of a syringe and if productive at any time is continued until no fluid can be aspirated. In our limited number of cases we have not found it necessary to use a suction-syphon apparatus to provide continuous suction.

When in the stomach the tube drains



gas, mucus, saliva, and the regurgitated materials from the small bowel and brings up swallowed air and liquids as fast as they are ingested. Nausea and vomiting are prevented. After the tube passes into the duodenum the toxic material, stagnant bile, etc., are all siphoned off. The upper abdomen becomes or remains flat, relieving or preventing distention and thus giving the bowel a better chance to resume or maintain its normal peristalsis.

Since our use of this procedure we have not found it necessary to do a jejunostomy.

Prime considerations in the treatment of these patients are dehydration from vomiting and sweating and decreased fluid intake; nutritional paucity from decreased intake and increased metabolic rate due to the fever, toxemia; and the maintenance of the chemical balance of the blood. In our hands ten per cent glucose in normal saline has served this purpose.

Oral administration is obviously impractical. Rectal administration limits the quantity and quality of fluids that can be given. Glucose may be irritating in certain cases and in a concentration above five per cent its osmotic pressure is above that of the tissue fluids; and both of these factors may inhibit water absorption. It is questionable whether the amount of glucose that can be absorbed through the colon is of any clinical value. Fluids given by this route in a desirable quantity may stimulate activity of the lower bowel.

Subcutaneous administration is slow, painful to the patient and there is always the danger of infection and slough. To provide isotonicity the concentration of glucose must be that of five percent, consequently, the amount that can be given does not justify the discomfort and risk. In the presence of circulatory collapse this method is of little use.

We believe the most direct route of administration to be the most efficacious, namely, the intravenous infusion. Two to five thousand cc. of ten per cent glucose in normal saline are given daily, slowly, at temperature of 105 degrees F., and using the commercial Vacoliter preparation, reactions are very infrequent. This overcomes dehydration, provides nutrition, re-

stores blood chlorides and stimulates the circulation and kidneys.

Occasionally, as indicated by a failing myocardium, or diminution of kidney function, or extremes of nutritional deficiency, the above is augmented by the intravenous injection of fifty to one hundred cc. of fifty per cent glucose, given one or two times daily if conditions may demand.

Morphine in adequate dosage not only allays pain and fear, quiets the patient, and is conducive to the most necessary rest, but also increases the tone of the rhythmic activity of the intestine. This, combined with the effect of the maintenance of chemical and water balance, upon the tonicity of the intestinal musculature, aids in controlling over-distention much better than formerly. We give one-eighth to one-sixth grains of morphine every four hours straight, complimented by one-sixth grain doses if necessary for pain and restlessness. To augment this we also use pitresin. This is given in a one cc. dose immediately before operation and one-half cc. doses every six hours when and as long as indicated. It does not seem to be followed by any clinical evidence of relaxation of the bowel, and its antidiuretic effect may favor a longer retention of the fluids particularly administered by the intravenous route.

No cathartics are given at any time. If the patient is progressing nicely, a compound enema is given after five or six days to prevent fecal impaction.

It is obvious that prevention is the best cure for these cases, but it is hopeless to expect the necessary education of the public and profession to take place over night. Until such time comes, when we are dealing with the uncomplicated cases of acute appendicitis only, we believe that the consistent, purposeful application of the above procedures will in part, at least, fulfill the surgeon's responsibility in the management of the perforated appendix.

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## DISCUSSION

*Dr. C. E. Clymer:* I have very little to add. I want to thank Dr. Colwick. He had a most excellently presented paper. We have not used pitressin. We think that in probably all cases of perforated appendices, a great deal depends upon what the surgeon does at the time of operation about staying well within the right lower quadrant, being sure that he doesn't contaminate the field, removing the appendix if convenient, and if not, draining. We use the Levine tube for distention. We feel that the placing of the Levine tube causes much less discomfort. We feed plenty of the tube into the stomach until it seems to have gone down into the duodenum. We do not give anything by mouth for forty-eight hours. We give morphine, not every four hours, but we give it as necessary to control the pain and discomfort if it is every hour, and the amount is not considered except we watch that the respiration is not lower than twelve or fourteen. We use continuous hot packs to the abdomen. We give the adult two thousand cc. of salt solution subcutaneously at night and two thousand in the morning. We give glucose intravenously sufficient for the food value. We give nothing by mouth. If we are using the Levine tube we feel that the patient can drink fluid if he wants to but we use continuous suction drainage. If he swallows a little soda pop it kicks right back up the bottle, and we know our suction is continuously working. We do not have to do enterostomies as we used to. We found before that there were fatalities in a great many cases because they segmented. At autopsy we would find perhaps two or three feet segmented off, with a kink. With the Levine tube we don't have occasion to do enterostomies, and have not done any for considerably over a year. We get a great many extremely late cases in service at the University Hospital, and in a great many of these cases we don't do anything. But that is the

line of treatment we follow out at the University. I don't know anything about pitressin. I want to emphasize this—morphine should be given sufficiently to stop the pain, and then, too, we use, of course, the hypodermoclysis and our glucose sufficient for food value.

*Dr. H. Dale Collins:* I wish to congratulate the author of this paper and to compliment him on the results of his treatment. If more of us became conscious of this existing plague, our death rate would be smaller.

The perforated appendix offers a problem which confronts every practitioner of medicine far too frequently.

The problem of management is not yet a standard procedure but we are beginning to agree on certain proven measures that are of value. We agree that the individual with a ruptured appendix should have no fluid by mouth but should be given from three thousand to four thousand cc. of fluid daily by venoclysis or hypodermoclysis. We agree again that these cases are greatly benefited by the use of the Levine tube and the continuous suction 'siphonage. This procedure empties the stomach and upper small intestine of toxic material, relieves distention and, in this manner, tends to overcome the paralytic ileus. We agree on the judicious use of morphine. It should be given regularly, in quantities sufficient to control pain, relieve restlessness and quiet mental anxiety. Morphine, in the ordinary doses, has been proven to be a mild stimulant to peristalsis.

We are now reviewing the case records of all the cases of appendicitis, admitted to the University Hospital. This work is yet incomplete as there have been over five thousand cases since 1921 and you can well imagine what a task it is to analyze this large number of cases. However, I do have some figures for the years 1932-1934 which may be of interest. We had a total of eight hundred fifty-two cases admitted. From this number, we had one hundred one ruptured upon admission. The mortality is approximately twenty-five per cent in these ruptured cases. This is a higher percentage than that reported by Dr. Colwick but I believe there is an explanation for this increase. We have practically no



cases from Oklahoma County. These cases are treated in other city hospitals. Our admissions come from a distance, sometimes one hundred fifty to two hundred miles. They have been juggled about during their long drive and we know that these cases have a much more guarded prognosis than those who have been more gently handled. Purgation plays a profound part in ruptured appendicitis. We have found in our cases, with such a diagnosis, that eighty five per cent have had cathartics and the majority have had them repeatedly.

We classify cases of ruptured appendicitis into groups and treat according to that classification. If we find we are dealing with a recently ruptured appendix, we operate immediately and remove the appendix, if it is not apt to traumatize the surrounding protective zone which has been set up. If the case is one wherein localization is developing, we allow the abscess to form and then drain.

The terrible class of these cases is the ruptured appendix with a fulminating spreading generalized peritonitis. These cases are treated conservatively and not operated until infection becomes localized.

We must continue to educate the laity and also some of our fellow practitioners about the necessity for early diagnosis and early operation and the danger of catharsis in treatment of appendicitis.

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#### Important Announcement to Physicians and Hospitals

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The following announcement is published in The Journal as it should be of interest to our members who anticipate practice in the Public Works Administration cases. Having had personal experience with many returned reports and bills I feel that this information will simplify the practice for those who participate in this work.

Due to physicians' unfamiliarity with government requirements in submitting charges, more than fifty thousand accounts submitted by physicians and hospitals in Civil Works Administration injury cases were returned for correction, or held for further information, necessitating undue delay in payment, because of one or more discrepancies.

As a former supervising auditor of the U. S. Employees' Compensation Commission I have condensed to a four-page booklet under the title "Instructions to Physicians and Hospitals for Submitting Charges in Federal Injury Cases," the numerous requirements scattered throughout sixty detailed pages of the government's regulations, each point being separately paragraphed and

headed for the most convenient reference. The following points are covered:

- Authority for treatment.
- Medical and x-ray reports.
- X-Ray films.
- Charges in disease cases.
- Post mortem examinations.
- Dental charges.
- Charges for drugs.
- Charges for appliances.
- Physicians owning hospitals.
- Payment for personal property.
- Submission of x-ray charges.
- Charges for blood.
- Itemization of accounts.
- When to submit charges.
- Joint accounts.
- Required signatures.
- Hospital charges.
- Nurses' charges.
- Assistants' and consultants' services.

In addition to the foregoing the booklet covers several important points such as inquiry as to payment of accounts, time required for receipt of remittances after payment is authorized, how charges may be expedited for payment, and other valuable information to physicians and hospitals having charges in Federal injury cases.

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C. B. Riddle.

Washington, D. C., P. O. Box 442.

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#### Robinson Clinic Announces Neurological Hospital

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Note the change in the advertisement of the Robinson Clinic, page xxvii, with Dr. G. Wilse Robinson as Medical Director and Dr. G. Wilse Robinson, Jr., as Superintendent. The new hospital will be known as the Neurological Hospital and although this will be operated by the Robinson Clinic there will an open staff.

The plans for this institution are to develop a physiotherapy department, complete in every particular and a private school for paralyzed children. A fire-proof construction is being instituted with specially constructed windows without bars; this will make the guests feel that they are not confined and give them a sense of freedom which can be felt under no other circumstances.

The building is expected to be ready for occupancy about October 10th.

# THE JOURNAL

OF THE

## Oklahoma State Medical Association

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DR. L. S. WILLOUR.....Editor-in-Chief

McAlester, Oklahoma

DR. T. H. McCARLEY.....Associate Editor

McAlester, Oklahoma

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Reprints of original articles will be supplied at actual cost provided requests for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, 203 Ainsworth Building, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

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## EDITORIAL

### SOCIALIZED MEDICINE

The late Herbert Hadley, former governor of Missouri, in his book "Rome and the World Today" drew the following conclusions: "Destroying the right of private ownership of property, denying to a man of talent and ability the right to advancement or extra reward for his services, brought upon the Roman world a social, industrial and economic breakdown that was the natural result of these efforts to run counter to the inflexible rules of human nature and the inexorable laws of supply and demand. Hope and ambition were banished from the hearts and minds of men."

In 301 A. D. the Roman Emperor promulgated an edict fixing a maximum price for provisions, and other articles of

commerce, and a maximum wage for every service, whether by a common laborer, an experienced lawyer or physician. There was but one penalty for a violation of the edict and that was death, both for the one who asked for an excess of the official price and for the one who paid it. Trade was thus forbidden to fluctuate exactly as now and no allowances were made for differences of conditions of production or transportation. The end was that the machinery of government in the fifth century became so cumbersome and so complicated that in the increasing incapacity and disorganization of those times it almost ceased to function. Thus ancient Rome died and the practice of establishing a new bureau or commission to deal with every new problem of government or to correct every real or imagined evil has been the outstanding earmark of the "new deal." The result has been the creation of a vast, burdensome and costly bureaucracy.

The foregoing is culled from the writings of Raymond G. Carroll in the Saturday Evening Post of July 20, 1935.

Quoting from Attorney-General Clegg: "Unless there is a halt in this tendency to saddle all responsibilities on the Federal Government, the time will come when we will have in Washington a bureaucracy knowing no master—and one day the country will be in ruins." The centralization of power, whether in industry, commerce, education or the trades or professions if granted to a bureau or individual, will set up an oligarchy which will create and foster bolshevism.

Announcement has been made by the Julius Rosenwald Fund that they propose to expend twenty-eight per cent of a million dollars during the coming year for the furthering of socialized medicine.

The Journal of the American Medical Association commenting on this matter says: "Trustees of the Julius Rosenwald Fund voted yesterday an appropriation of \$284,000 to be expended in the fiscal year beginning July 1st for welfare work and rural education among colored persons, and for further socialized medicine."

Edward R. Embree, President of the Fund, said that the Rosenwald effort to place competent medical service and hos-



pitalization within the reach of persons of moderate means paralleled the program of the medical profession. He quoted Michael M. Davis of the Fund's medical division as reporting that three hundred forty-four plans to cut the cost of medical care, or to make it easier for the average family to pay for it, had come to his office the past year. Certain of these projects, he said, had been endorsed in principle by the American College of Surgeons.

The medical profession should be aware of this propaganda in behalf of state medicine. In the crystallization of public opinion, physicians will do well to bring the point of view of the medical profession to the attention of their patients, women's clubs, chambers of commerce and similar organizations.

In a previous editorial it was shown as to what socialized medicine has done for both patient and physician in Russia, Germany and England, and Senator Henry J. Allen, in a recent address described the result in Germany and England under this form of *medicine* which he had observed during trips abroad in recent years.

He declared that Germany had discovered under state medicine that diseases have multiplied alarmingly because of constant malingering and the load is reaching far above the estimation of the original proponents. Senator Allen said further that the keen ability of the profession in this country should be sufficient to save this country from the disaster that has befallen it in England, Germany, Austria, Poland, Italy and other countries of Western Europe where medicine is practiced under direction and payroll of the state.

The danger in America is imminent. One-fifth of the people are now beneficiaries of the United States government. Sentimentalism will be used to extend the social phases of government to make the practice of medicine a function of the state. Senator Allen said that "the medical profession in the United States must lead the way to a middle ground. I can't help but believe the profession will be able to work out a modified answer, but medicine cannot hope to be left untouched; some changes will have to be made. There is no

field of human activity in the United States that is so challenged to change as the practice of medicine. The great thing we call private practice has reached a plane in the United States that is worth saving but the problems facing the medical profession will not solve themselves. An intelligent solution must come from within the profession."

—o—

### *Editorial Notes--Personal and General*

DR. CHAS. M. PEARCE, State Health Commissioner, Oklahoma City, announces there will be an immediate start on malaria projects throughout the State. Going hand in hand with this malarial elimination project there will be a sanitation project which will help materially in typhoid control.

DR. MARVIN D. HENLEY, Tulsa, attended the Academy of Ophthalmology and Otolaryngology in Cincinnati in September.

DR. and MRS. McLAIN ROGERS, Clinton, had as their guests in September, DR. and MRS. C. A. THOMAS of Tucson, Arizona. Dr. Thomas, it will be remembered, gave a very interesting address on tubercular subjects at our Annual Meeting in Tulsa in 1934.

DR. L. A. MITCHELL, Stillwater, announces that DR. POWELL E. FRY will be associated with him in the practice of medicine.

DR. J. T. LOONEY, Tishomingo, has been appointed Health Officer of Johnston County.

DR. and MRS. C. S. WALLACE, Holdenville, have returned from Galveston where they have been vacationing.

DR. and MRS. E. HALSELL, and children, Muskogee, have returned from Haven Beach, Florida, where they spent the latter part of August.

DR. J. HUTCHINGS WHITE, Muskogee, has returned after visiting points in Philadelphia and Virginia.

DR. PAUL SANGER, former Yukon physician, has been appointed camp physician at a CCC camp at Ft. Reno.

DR. and MRS. G. GARABEDIAN, Tulsa, have returned from a visit in Memphis, Tenn.

DR. L. S. WILLOUR, McAlester, spent the latter part of August in San Antonio and Aransas Pass, where he tried his hand at deep sea fishing.

DR. and MRS. C. A. HICKS, Wetumka, have returned from Colorado Springs where they spent the latter part of September.

DR. C. V. RICE, Muskogee, announces the removal of his office from the Barnes building to 1620 West Okmulgee Avenue.

DR. GEO. A. HEFFERNON, Seminole, has gone to Detroit and Chicago where he will do some

special work preparatory to becoming associated with Dr. Curt Von Wedel, Oklahoma City.

DR. PAUL V. ANNADOWN, Sulphur, has been named physician for Oklahoma A. & M. College.

DR. NELSON ROLLE, Custer City, announces his removal to Poteau where he will be associated with Dr. S. D. Beville.

DR. E. ELTON BAUM, Jennings, announces his removal to Afton.

DR. GUY CLARK, Milburn, is vacationing in New Mexico.

DR. E. S. FERGUSON and son, John Haven Ferguson, Oklahoma City, have returned from Honolulu where they spent their vacation in August.

DRS. J. C. BROGDEN and H. D. MURDOCK, Tulsa, have returned from a short fishing trip to Corpus Christi, Texas.

DR. PIERRE N. CHARBONNET, Tulsa, has returned from a West Indies Cruise.

DR. and MRS. J. F. MARTIN, Stillwater, have returned from a vacation trip to Carlsbad Caverns in New Mexico and points in Southern Texas.

DR. and MRS. A. S. RISSER, and children, Blackwell, spent the latter part of August in Minneapolis, Minn.

DR. and MRS. D. W. DARWIN, Woodward, spent September in Woodland Park and Carlsbad Caverns in New Mexico.

DR. L. G. LIVINGSTON, Cordell, has received from the Federal Government a commission as captain in the United States Army Medical Corps Reserve.

DR. and MRS. SAMUEL R. CUNNINGHAM, Oklahoma City, have returned from Rancho Dias de Alegres near Las Vegas, New Mexico, where they spent two weeks in September.

DR. and MRS. P. B. MYERS, El Reno, have returned from a vacation trip to points in Colorado and New Mexico.

DR. LYMAN C. VEAZEY, Ardmore, announces the association of DR. J. HOBSON VEAZEY (formerly of Madill), in the practice of medicine and surgery. Dr. J. H. Veazey recently returned from New York where he has been doing post graduate work. Their new address is 608-610 Simpson Building, Ardmore.

DR. E. H. COACHMAN, Muskogee, announces the opening of his new office, 800-1-2 Manhattan Building. Dr. Coachman, former resident surgeon, New Orleans Eye, Ear, Nose and Throat Hospital.

THE McBRIDE CLINIC and RECONSTRUCTION HOSPITAL, 717-723 North Robinson, Oklahoma City, announce FREDERICK H. MANN as Director of Postural and Medical Gymnastics in the department of Physical Therapy and MURIEL Y. EKREM MANN as Masseuse and Hydrotherapist. Mr. and Mrs. Mann were formerly at the Battle Creek Sanatorium.

DRS. J. G. and SAM BINKLEY, Oklahoma City, announce the opening of a joint office at 804-805

Medical Arts Building. Dr. Sam Binkley has recently returned from New York City where he took post graduate study in cancer surgery at Memorial Hospital.

DR. and MRS. J. O. LOWE, and children, Tulsa, have returned from Basswood Lodge, Ely, Minn., where they spent the month of August.

DR. and MRS. J. S. ALLISON, Tahlequah, have returned from a vacation spent in Colorado.

DR. and MRS. N. W. MILLS, Snomac, spent August in Mississippi.

DR. and MRS. F. W. REWERTS, Bartlesville, spent several weeks in August visiting in Colorado.

DR. and MRS. L. G. NEAL and family, Ponca City, have returned from New Mexico and neighboring states where they spent several weeks in August.

DR. C. W. WILLIAMS and son Carl, Woodward, visited in Kansas, Iowa and points in Minnesota in September.

DR. and MRS. G. A. KILPATRICK, Henryetta, announce the marriage of their daughter, Dorothy Lu, to Lieut. Charles Miller of Sandea Park, New Mexico, son of Mr. and Mrs. Walton J. Miller of Sapulpa, September 5th. They left immediately after the ceremony for their home in New Mexico.

DR. and MRS. H. K. SPEED, Sayre, announce the marriage of their son, Dr. Henry Kirvin Speed, Jr., to Miss Ruth Armstrong, daughter of Mr. and Mrs. H. H. Armstrong of Norman. Following a trip to points in Texas, Dr. and Mrs. Speed, Jr. will be at home in Sayre.

### *News of the County Medical Societies*

LINCOLN County Medical Society met at Chandler September 4th for their first fall meeting. After seven o'clock dinner a round table discussion followed the reading of a paper by Dr. Ned Bursleson of Prague. Dr. Carl H. Bailey, Stroud, whose application for membership, previously presented, was accepted at this meeting.

SOUTHERN Oklahoma Medical Association members were guests of Central Oklahoma State Hospital Staff and Cleveland County Medical Association September 3rd when they held their twenty-eighth quarterly session. After registration, ward walks and clinics, and luncheon at noon, the following program was rendered during the afternoon: "Welcome Address" by Dr. James O. Hood, Norman; "The Laws of Oklahoma in Relation to Public Health Program" by Dr. B. H. Cooley, Norman; "The Minor Psychoses," Dr. J. J. Gable, Norman; "The Use of Iodized Oil in Treatment of Asthma" by Dr. Ray M. Balyeat, Oklahoma City; "Symposium on the Heart and Interpretation of the Electrocardiogram" by Drs. Wann Langston and Mulvey, both of Oklahoma City; "Sterilization as Applied to the Insane" by Dr. C. A. Steen, Norman.

WOODS-ALFALFA County Medical Societies held their first fall meeting September 24 at Cherokee. Drs. E. Goldfain and E. Margo, Oklahoma City, read papers on "Management of the Gastro-Intestinal Tract in Chronic Arthritis" and "Low Back Pains," respectively.



**DR. FOREST SNOWDEN KING**

Dr. King passed away at his home in Muskogee August 5th, 1935, after an illness of several months. He was born in Lamar-tine, Pa., July 12th, 1880. Dr. King graduated in medicine at the University of Pittsburgh in 1907 and located in Pryor, Oklahoma, in 1908 where he owned and operated the Palace Drug Store. After practicing five years in Pryor he spent two years in Chicago and New York where he completed his special work in eye, ear, nose and throat, locating in Muskogee in 1915, at which time he formed a partnership with Dr. W. B. Newton.

Dr. King was a member of the First Presbyterian Church, the Rotary Club, the Woodmen of the World, Muskogee Lodge No. 28 A. F. & A. M., the Consistory and Bedouin Temple.

Funeral services were conducted from the First Presbyterian Church, Dr. B. D. Weeks, president of Bacone College, officiating. Dr. Weeks paid a beautiful tribute to the medical profession and in speaking of Dr. King he used the Biblical expression, "He saved others; himself he could not save."

Dr. King was held in high esteem by the medical profession and his passing will be keenly felt by a large circle of friends. He is survived by his wife and one daughter, Marjorie. Interment was at Greenhill Cemetery, Muskogee.

**DOCTOR JAMES M. MATENLEE**

Dr. J. M. Matenlee, Sapulpa, died June 26, while visiting relatives in Oklahoma City.

He was born at Vandalia, Illinois, October 21st, 1864. Graduated from Beaumont Medical College, St. Louis, Mo., in 1889. He was Examiner for the Knights of Pythias and proprietor of the Matenlee Sanitarium for the treatment of liquor and drug addictions at Carthage, Mo. He moved to Sapulpa in 1907 and was active in the practice of medicine until failing health compelled him to retire in December, 1934. He was Past President and always an active member of Creek County Medical Society. Also Past Master of Knights Templar and a Shriner.

He is survived by a son and one daughter.

Burial was by cremation in Kansas City.

**DOCTOR OLLIE H. PARKER**

Dr. O. H. Parker, Custer City, died at his home July 9th, following a long illness.

Dr. Parker was born in 1872, and has been a resident of Custer City for twenty-seven years and has practiced medicine in Custer County since 1903. He was county health superintendent of this county for six years.

He is survived by his widow and three daughters and one son.

**DOCTOR MARTHA JANE BLEDSOE**

Dr. Martha Jane Bledsoe, Chickasha, died July 3, 1935. She was born September 19, 1862, in Lafayette, Indiana. She received her medical education in the State University of Iowa at Keokuk, graduating in May, 1906. Since that time she has made her home in Chickasha where she was active in civic affairs and was organizer and past president of the Business and Professional Women's Club of Chickasha. She was also in the Volunteer Medical Service Corps during the World War.

Funeral services were conducted from the First Methodist Church of Chickasha, with interment at the Rose Hill Cemetery. There were no immediate relatives surviving.

**DOCTOR ALVA JONES**

Dr. Alva Jones, Sapulpa, died August 1, after a short illness.

Dr. Jones was born in Fordsville, Ky. In 1893 he was graduated from the Kentucky School of Medicine, interned in one of the New York hospitals, later locating in Monett, Mo., where in 1906 he married Miss Fanny Williams.

Dr. Jones came to Sapulpa twelve years ago and has devoted his practice to the treatment of the eye, ear, nose and throat until the time of his death.

He is survived by his widow, mother, and two sons.

Funeral services were conducted in Monett, Mo., where interment took place.

**The True Economy of Dextri-Maltose**

It is interesting to note that a fair average of the length of time an infant receives Dextri-Maltose is five months; that these five months are the most critical of the baby's life; that the difference in cost to the mother between Dextri-Maltose and the very cheapest carbohydrate, at most is only \$6 for this entire period—a few cents a day; that, in the end, it costs the mother less to employ regular medical attendance for her baby than to attempt to do her own feeding, which in numerous cases leads to a seriously sick baby, eventually requiring the most costly medical attendance.

**Progressive Atlanto-Axial Dislocation**

Edgar A. Kahn and Luis Yglesias Ann Arbor, Mich. (Journal A. M. A., August 3, 1935), regard forward displacement of the atlas on the axis with fracture of the odontoid process as a progressive lesion. They believe that one should not be lulled into a false sense of security following a symptom-free interval on conservative treatment. During the course of conservative treatment, should evidence of progression be found, occipitocervical fusion is indicated before pressure myelitis develops. If pressure symptoms develop, removal of the arch of the atlas, ordinarily followed by bony fusion of the occiput to the cervical spine, is the treatment of choice.

# ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

## ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.  
717 North Robinson Street, Oklahoma City

### Back Strain and Sciatica. Frank R. Ober. J. A. M. A., CIV, 1580, May 4, 1935.

Dr. Ober presents a new theory relating to the cause of lame back. He points out that the x-ray evidence of pathology in the sacro-iliac and lumbosacral regions makes it very difficult to decide upon a positive diagnosis. He has discovered that the iliotibial band is an important factor in producing back pain, with or without associated symptoms of sciatica. He describes the origin and insertion of the iliotibial band and points out the manner in which the tendon of the gluteus maximus muscle enters the posterior part of the iliotibial band.

The pathology and symptoms are discussed and the characteristic findings at examination are described.

Relief of the contracture is the essential factor in the treatment. In patients without sciatica, stretching exercises may relieve the pain. In those patients with severe sciatica, operation is indicated. The operation consists in transverse division of the fascia lata from below the anterior superior spine to the anterior border of the gluteus maximus muscle.

In several cases, the results of treatment were dramatic. In some instances the sciatica lasted from six to eight weeks. Thirteen patients have been operated upon with relief in all but one case.

Five cases are reported, in all of which the patients obtained relief from their symptoms.

### What Should a Patient With Arthritis Eat? Walter Bauer. J. A. M. A., CIV, 1, Jan. 5, 1935.

The author takes up a very timely subject in regard to the diet of the arthritic patient. It is too often that the patient is not scientifically treated in this respect. He points out that there should be an accurate knowledge and diagnosis of the patient's condition and that the diet should be prescribed according to the indications. When the arthritic condition is specific or of known etiology, the diet should be prescribed as indicated for the particular disease in combatting the effects of the etiological agent. The author stresses particularly diet in gout and insists that the diet be low in purines. With the exception of gout, there is no specific diet for arthritis of known etiology. Arthritic conditions of unknown etiology include degenerative arthritis (hypertrophic), proliferative arthritis (rheumatoid arthritis), and rheumatic fever.

Degenerative or hypertrophic arthritis is considered by most authorities to be due to trauma. At autopsy, the knee joints show characteristic changes in the joint surfaces, which may be attributed to the "wear and tear" of age rather than to some inflammatory process, metabolic upset, or

endocrine imbalance. In these patients, a diet which attempts to reduce the weight, but at the same time meets the caloric requirements of the body, is helpful in reducing trauma.

Proliferative or rheumatoid arthritis is characterized by proliferation of the synovia and connective tissues of the subchondral spaces and round-cell infiltration. The process is not to be confused with the degenerative or hypertrophic type. It is important to remember the characteristic remissions and relapses which so frequently occur. A lapse of five years, preferably ten, should be allowed before a definite cure is pronounced. Numerous diets have been prescribed for rheumatoid arthritis. These include: (1) omission of acid fruits and vegetables; (2) the taking of one type of food at a time (fat, protein or carbohydrate); (3) alteration of the acid-base balance of the diet; (4) omission of food to which patient is hypersensitive; (5) low-protein intake; (6) low-carbohydrate intake. In those cases where there is some food sensitivity, that food should certainly be removed from the diet, but these instances are rare. The other suggestions cited which have no physiological basis are contra-indicated. The proper diet is well balanced and sufficient in caloric and vitamin content to care for the body needs of the patient.

### Congenital Dislocation of the Hip. Statistical Analysis. Arthur Steindler, Jacob Julowski and Ernest Freund, J. A. M. A., CIV, 302, Jan. 26, 1935.

The authors make a statistical report of 501 dislocated hips seen in 387 cases. They point out the end results obtained in using various surgical procedures. They consider the closed reduction the method of choice in unilateral cases up to five years of age and in bilateral cases up to six years of age. When difficulty is encountered in the closed reduction, they use the open operation as a supplementary measure. Results and indications for palliative operative procedures—such as shelf operations and osteotomies—are also given.

The authors stress particularly the fact that end results can only be evaluated after adolescence has been attained, as so frequently alterations are observed in the growth and shape of the acetabulum and head. Results usually become definitely worse in proportion to the duration of the observation period.

This is a timely and excellent presentation of one of the orthopaedic surgeon's greatest problems and is worthy of most careful consideration.

### Treatment of Progressive Pseudohypertrophic Muscular Dystrophy. J. H. Kite. J. Med. Assn. Georgia, XXIV, 59, Feb 1935.

The author makes a differential diagnosis between the dystrophies and the atrophies in this type of disease and insists that they are two separate disease entities which require different forms of treatment. He reports forty-four cases of progressive muscular dystrophy, all of which were



males. Three-fourths of these patients begin to have symptoms before the age of five years. It has been found that the earlier the onset the poorer is the prognosis. Any illness which confines the patient to his bed or restricts his activities causes an increase in the severity of the symptoms; hence, casts and operative treatment are contra-indicated.

Six patients with progressive muscular dystrophy were treated with epinephrine and pilocarpine, and have been followed from one to two years. They showed a temporary improvement while under treatment and developed a certain amount of euphoria. It could not be said with any degree of certainty that a single case was arrested for a longer period than is sometimes observed in untreated cases. Certainly none of the patients were cured.

During the past two years, patients with progressive muscular dystrophy have been helped by feeding them glycine and other amino-acids. The literature has been reviewed and the results, obtained by various workers, warrant the further use of amino-acids.

Since there is so little that can be done for these unfortunate children, attention is called to these two new methods of treatment in the hope that they will be used by the family physician.

A bibliography is appended.

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
LeRoy Long Clinic  
714 Medical Arts Building, Oklahoma City

At the meeting of the Paris Surgical Society June 19, 1935, there were some interesting reports. The following abstracts are based upon synopses by G. Cordier, and published in *La Presse Medical*, July 10, 1935.

1. **Occlusion of the Small Intestine by a Non-biliary Calculus Composed of Oxalo-Phosphates** (Occlusion de l'Intestin Grele par un Calcul non Billaire de Nature Oxalo-Phosphatique). This report was by P. Mouloguet for Ho-Dac-Li of Hanoi.

A woman presented the evidences of acute intestinal obstruction. The general condition was grave. At operation it was found that there was complete occlusion of the intestine by a very large calculus which was removed by enterostomy. There were no evidences of disease of the bile tract area. The patient died two days after operation.

A chemical examination showed that the calculus was composed of oxylate and phosphate of calcium. It appeared to be a true enterolith.

Comments: We have operated upon a patient who had a complete obstruction of the small intestine by an enterolith.

We operated upon another patient a number of years ago where there was complete occlusion of the small intestine by a mass made up of honey comb and green corn.

\* \* \*

2. **A Case of Traumatic Torsion of Sound Tube and Ovary** (Un Cas de Torsion Traumatique des Annexes Saines). This case was reported by M. Picot for A. Charbounier and H. Brandt.

A girl of fifteen years about midway between menstrual periods fell on a stairway striking the stairs in a sitting position (tombe assise dans un escalier). There was immediate, more or less paroxysmal, progressive pain in abdomino-pelvic region. The next day there was vomiting. Digital examination per rectum disclosed a small, firm,

tender mass in the region of cul-de-sac of Douglas. At operation two days after injury the right adnexae were found twisted ninety degrees.

The authors have found five similar reports in the literature. The usual symptoms are more or less paroxysmal pelvic pains without fever, together with the findings of a tender mass by rectal examination ("la constatation au toucher rectal d'une masse tres douloureuse dans le Douglas").

In the discussion, M. Arrou reported the finding of torsion of the right adnexae in the case of a young foreign woman ("chez une jeune etrangere") in which there was not, by a difficult interrogatory ("par un interrogatoire difficile"), any history of trauma.

M. Raoul and Charles Monod, continuing the discussion expressed doubt about any relation between trauma and torsion of the adnexae.

Comment: Taking into consideration the mechanics of torsion of the adnexal structures, it is our feeling that reports like this should be taken cum grano salis.

\* \* \*

3. **Cyst of Ovary Communicating Through the Tube with the Uterus. Hydrorrhea** (Kyste de l'Ovaire Communiquant par la Trompe avec l'Uterus. Hydrorrhée).

M. A. Gosset, speaking for M. M. Ledoux-Lebard, P. Funch Bretano, E. Wallon and Jean Dalsace, reported the case of a woman characterized by abundant watery vaginal discharge and a mass of uncertain proportions in the pelvis. The patient was obese. At operation an enormous hydrosalpinx was found on the left side. It communicated with a cystic sub-peritoneal mass. The histo-pathological examination showed this mass to be a sclerotic ovarian cyst with intracystic ramifications, without evidence of malignancy.

LeRoy Long.

- Intrathoracic Goiter.** By Frank H. Lahey and N. W. Swinton. *Surgery, Gynecology and Obstetrics*, October, 1934.

This is an excellent, well illustrated article which should be read in the original for a complete understanding of the valuable points in diagnosis and treatment of intrathoracic goiter.

The authors conclude that any patient with mechanical interference to breathing should be suspected of having an intrathoracic goiter and should be subjected to an x-ray examination of the mediastinum.

In the presence of an intrathoracic goiter, deviation or flattening of the trachea either laterally or antero-posteriorly together with the mediastinal shadow can be demonstrated in practically all cases.

Dilatation of the superficial thoracic veins should always make one suspicious of the presence of an intrathoracic goiter.

Any goiter which is low-lying and tends to become intrathoracic should be removed before it becomes intrathoracic.

The introduction of a catheter between the vocal cords into the trachea makes the removal of large and difficult intrathoracic goiters infinitely more safe.

Statistics are given showing the incidence of Grade 1 and Grade 11 intrathoracic goiter. Figures are also submitted showing the age incidence, sex incidence, the incidence of pre-operative and post-operative laryngeal paralysis, the incidence of tracheal deviation or pressure, the incidence of obstructive symptoms, the duration of the goiter, the incidence of hyperthyroidism, the immediate post-operative complications and the mortality rate,

together with the cause of death in 21 cases in a group of 1,086 patients operated upon with partly intrathoracic goiter. LeRoy D. Long.

**Diabetes and Hyperthyroidism. E. P. Joslin and Frank H. Lahey, *Annals of Surgery*, October, 1934.**

These two men, who are outstanding in their respective fields, have been working together for many years. At the Deaconess Hospital in Boston they, perhaps, see more diabetic patients who have hyperthyroidism than are seen in any other clinic in the world. In 1928 they made a report about this combination of diseases.

Hyperthyroidism demands increased fuel intake to keep up with increased combustion, diabetes results in lessened ability to take care of increased fuel intake due to diminished pancreatic function.

Glycosuria is so related to hyperthyroidism that care must be taken not to make the diagnosis of true diabetes in hyperthyroidism when it actually does not exist. Raised blood sugar levels are suggested to avoid this error.

By increasing the percentage of two-stage operations in primary and secondary hyperthyroidism, respectively one hundred per cent and fifty per cent, the mortality of the first series in 1928, 4.8 per cent, has been reduced in this present reported series to 1.6.

The preparation of patients with hyperthyroidism and diabetes for operation is of extreme importance. No heroic attempt has been made pre-operatively to make the urine completely sugar free with diet or insulin. Carbohydrates have been maintained at about one hundred grams, the proteins at approximately one gram, and the total calories not far from thirty per kilogram of body weight. Insulin has been given in small doses, usually five units, three or more times a day, and, if a prompt response to diet and insulin did not result—since hyperthyroidism increases the demand for insulin—the insulin has been increased to ten units or more at a dose and the frequency increased. Formerly they gave food within three hours after operation but this plan has been given up. Now no food is given within four hours of operation as it has been their experience that food given within this time remains in the stomach undigested and increases post-operative vomiting. By this plan one can advantageously begin to feed these patients sooner after operation. The dose of insulin before operation has always erred by being too small rather than too large. Post-operatively the frequency of dosage of insulin has seldom been increased except in the very severe cases, since they have found that the sudden increase in glycosuria after operation has been temporary, and unattended by any serious harm. Following operation every effort has been made to give as much as possible of the carbohydrates of the original diet employed pre-operatively.

Ten minims of iodine in the form of Lugol's solution has been given three times daily before operation. Since the publication of their first series in 1928, they have proven, particularly in patients who are vomiting post-operatively, that Lugol's solution may safely be introduced into the intravenous solution and given intravenously, together with the glucose and salt solution, insuring thus the constant effect of iodine regardless of post-operative gastric upset.

Following thyroid operations the severe post-operative thyroid storms are customarily treated by the intravenous employment of salt solution and glucose, and similarly in such cases complicated by diabetes, salt solution has been employed

in large quantities with fifty to one hundred gm. of glucose in the twenty-four hours during the immediate post-operative period.

Attention is called to the need of avoiding unnecessary puncture for laboratory tests of the superficial veins in patients with hyperthyroidism and diabetes. As a means of avoiding such punctures, the employment of capillary blood from the ear, and the use of micro-blood sugars, is suggested.

The effect of hyperthyroidism on diabetes is to intensify the disease, as with infection, increasing the demands for insulin. Following the surgical relief from hyperthyroidism there is an increase in carbohydrate tolerance of thirty gm. or more and a marked diminution in the need for insulin.

LeRoy D. Long.

**The Treatment of Cancer of the Breast and the Results of Operation. By Richard H. Overholt and Edwin C. Eckerson. *New England Journal of Medicine*, Vol. 211, No. 16, Pages 703-708, October 18, 1934—From the Department of Surgery, Lahey Clinic, Boston, Massachusetts.**

These authors have made a study of the 719 patients who complained of, or were found to have breast lesions at the Lahey Clinic during the ten-year period of 1923 to 1933.

They lament the fact that by our present method of discovering and treating carcinoma of the breast, the most that can be promised is that one patient in every three will be alive five years later and one in every four will be well after the ten-year period. They feel that improvement of the results is considerably hampered by the visual conception of breast cancer based upon illustrations of breast carcinoma which are found in text books and articles on the subject in its late form. They devote considerable discussion to the value of a visual conception of breast cancer which includes the early lesion. "We should focus our attention on a normal appearing breast without dimpling or puckering or without nipple retraction. The presence of a palpable tumor should in itself be considered the classical sign."

Because chronic cystic mastitis is the most frequent lesion to be confused with malignancy of the breast, they have discussed their attitude toward this condition. "There is evidence that chronic cystic mastitis may predispose to mammary cancer." They quote Ewing and Cutler as to the frequency of association between chronic cystic mastitis and carcinoma. Overholt and Eckerson express their own opinion as follows: "We have found that twelve per cent of our cases of chronic cystic mastitis show considerable intraductal hyperplasia on microscopic examination. We prefer to consider intraductal hyperplasia in the chronic cystic breast as a pre-cancerous condition."

The working rule in the Lahey Clinic as to the treatment of various breast lesions is very similar to that in most good clinics but may be profitably reviewed.

1. Chronic cystic mastitis—"Discrete palpable tumors are excised and an immediate frozen section made."

"If there is no tumor present, or for vaguely defined areas of thickening in association with chronic cystic mastitis, we keep the patient under observation and follow at intervals of three to six months. If the area of thickening fails to disappear or becomes more pronounced exploration is advised."

"For bilateral chronic cystic mastitis, the so-called 'shotty' breast, which is uncomplicated by the presence of a discrete tumor or by the presence



of a nipple discharge, we do not for that lesion alone advise bilateral simple mastectomy."

"If there is a brownish or bloody nipple discharge and an intraductal papilloma cannot be demonstrated, clinically or by exploration, we believe a simple mastectomy should be performed. In our experience, carcinoma has been present in one-third of the cases showing a sanguinous discharge."

2. Benign tumors and cysts: "The clinical differentiation of benign tumors, cysts and early malignant lesions is often impossible. This difficulty is of little consequence, since any palpable lump in the breast should be removed and examined histologically." "The treatment of these various tumors beyond local excision depends entirely upon the histologic findings."

The general statistics in breast lesions during the ten-year period covered are interesting. Seven hundred nineteen patients complained of, or were found to have breast lesions. About a third, or 280 of these, were not operated upon. (Many of the unoperated cases had mild forms of bi-lateral chronic cystic mastitis and operation was not recommended.)

Another third, or 238, were operated upon and found to have a benign lesion. The most frequent benign lesion was chronic cystic mastitis.

A malignant lesion was found in 201 of the 719 cases. In other words, twenty-seven per cent of those who sought advice about breast lesion had a cancer of the breast.

The carcinoma of the breast statistics are then given. Of the operative cases all but four have been followed and there is included in the article a review of all the operated cases. A significant point is the fact that sixty per cent of all the deaths occurred within the first two years.

Five-year results for those patients operated upon during the first half of the ten-year period, or sixty-two patients, gives a survival of twenty-five, or forty per cent, who were living five years later without evidence of cancer.

In this group of cases, forty-eight per cent were found to have axillary involvement. Averages are quoted from other authors at about fifty per cent. Surprisingly in this series of the twenty-nine cases with lymph node involvement and operation, nine, or thirty-one per cent, were living without metastasis at the end of five years.

They have also considered the age factor. Many have discussed the belief that cancer of the breast in the young runs a much more rapidly fatal course than in older patients. They quote Lane-Clayton who has pointed out that, on the whole, there is no striking difference in age group and that prognosis in the young may be erroneous. In this series of patients the statistics agree with the Lane-Clayton point of view.

They conclude the article with a brief note upon the use of radiation. They have used post-operative intensive deep x-ray treatment in all carcinoma of the breast cases for the past eight years. Nothing is said about pre-operative x-ray.

"In women operated upon before the menopause, x-ray treatments are directed to the ovaries to produce an artificial menopause and thereby check the stimulation of breast tissue by ovarian hormone."

There is a brief note concerning the tremendous importance of systematic, careful follow up with proper attention to solitary recurrences in the scar or in accessible situations.

Comment: There is nothing particularly unusual about this report. Their results have been good, but they are about the same as will be found in all good surgical clinics. They express certain minor differences of opinion upon procedure and

treatment. The most important feature of this article is the fact that it demonstrates a definite consensus of opinion toward uniformity in the diagnosis and treatment of all breast lesions. In the first place we are all thoroughly convinced that our results can be improved only by a visual conception of breast cancer which includes the early lesion. This indicates that dimpling or puckering or nipple retraction are not nearly so important in early diagnosis as a normal appearing breast with a palpable tumor.

It is impossible to divorce diagnosis and treatment of benign lesions and early malignant lesions. The attitude toward the treatment of benign lesions expressed in this paper is becoming a commonly accepted one.

It would be well to close this abstract with a tremendously important statement of these authors: "The clinical differentiation of benign tumors, cysts and early malignant lesions is often impossible. This difficulty is of little consequence, since any palpable lump in the breast should be removed and examined histologically."

Wendell Long.

## INTERNAL MEDICINE

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By C. E. BRADLEY, M.D.

**Elimination Diets for Children.** Clement B. P. Cobb, M.D., New York. *American Journal of Diseases of Children*, July, 1935, Vol. 50, Number 1, Pages 187-211.

Because the author feels that a set of non-allergic or elimination diets would be of great help to the physician treating patients with various allergic manifestations, he presents seven specific diets, with complete instructions for the patient's guidance as well as recipes for the special foods.

Elimination diets are particularly valuable when one considers that the scratch tests are not infallible indications of specific idiosyncrasies; that is, negative reactions to food often exist with clinical sensitivity. This can only be ascertained by trial and error methods which are often involved and even haphazard in some cases. The diets which the author presents are complete and may be roughly classified as follows:

- Diets 1 and 2: Without milk, egg and wheat.
- Diet 3: Without egg and wheat, with milk.
- Diet 4: Without egg and milk, with wheat.
- Diet 5: Without milk.
- Diet 6: Without wheat.
- Diet 7: Without egg.

Some investigators believe that in some patients sensitization to whole groups of foods, such as cereals, fruits, meats or vegetables occurs; these diets may be easily improvised to meet this contingency.

The author presents several factors upon which to base the selection of an appropriate trail diet to overcome various allergic symptoms such as eczema, angioneurotic edema, asthma, vasomotor rhinitis, urticaria, migraine, and rashes other than eczema. It has been shown that the greatest sensitivity to food is encountered in the second year, and after the sixth year the incidence is low. The following considerations will be of great benefit in selecting the suitable non-allergic diet:

1. A carefully taken history—with an attempt to determine the foods which the child does not like, or the ingestion of which causes

abdominal pain, vomiting, diarrhea, or the more common allergic reactions.

2. A "food diary"—a complete list of everything that passes the patient's mouth, with careful notations regarding the appearance of any allergic symptoms.
3. Scratch or intracutaneous tests—in the hands of those who are experienced in their use and interpretation. It is well to give tests for inhalents as well as for food stuffs, particularly in the "flexural type" of eczema.
4. Elimination diets.

It is well to select diets three, four, five, six, or seven at first, with or without modifications as indicated. A trial period of two or three weeks is pursued. If progressive improvement with alleviation of symptoms occurs, a new food may be added every fourth day, and eliminated if there are signs of any symptoms recurring. It may be tried again at a later date.

If these diets fail to give satisfactory results, then diets one or two should be tried. If these fail there is nothing left to do but put the patient on an exclusive diet of milk, two or three quarts daily, and work out special diets that eliminate entire groups of foods. Luckily these idiosyncrasies are relatively uncommon and may often be demonstrated by skin tests.

The diet lists are quite complete and palatable foods are suggested, and they should be beneficial to any physician who is encountered with allergic difficulties.

**Spontaneous Hypoglycemia Due to Hyperinsulinism in a Child.** Arthur M. Dannenberg M.D., M. A. Bell, M.D., and Benjamin Gouley, M.D. Philadelphia, Pa. *The Journal of Pediatrics*, July, 1935, Vol. 7, Number 1, Page 44.

Since 1924 hypoglycemia due to hyperinsulinism has aroused a great deal of interest. As early as 1914, Hilliger associated recurrent vomiting in children in which drowsiness and occasional convulsions occurred with hypoglycemia. Hypoglycemia has been mainly attributed to severe structural and functional changes in the liver, to neoplasia, and to hyperplasia of islet cells of the pancreas, and to inadequate secretion of the medulla of the adrenal cortex.

The dramatic suddenness with which an attack of hypoglycemia may occur in apparently well children is illustrated in the case reported by the author.

A thirteen month old male infant was admitted to the Jewish Hospital on December 1, 1931. The patient's history was irrelevant excepting for the fact that he was born one month prematurely and weighed four pounds at birth. He had had acute purulent otitis media at three months, measles at six months, and chicken pox at eight months. He was unable to stand at thirteen months, when his weight was sixteen pounds. His parents were both in good health, and there was no history of diabetes in the family.

The evening before admission he vomited his evening feeding, became stuporous, had an ashen color, cold and clammy skin, and diverging strabismus.

Examination showed an undernourished and underdeveloped male infant, who was cyanosed. During the examination he had a convulsion which lasted about thirty seconds. He was anemic and the chest showed a rachitic rosary and flaring costal angle.

Laboratory findings: The urine was entirely nor-

mal. Hb. 58 per cent; R.B.C. 4,550,000; W.B.C., 11,800; neutrophils, 59 per cent; lymphocytes, 39 per cent; mononuclears, 1 per cent; transitionals, 1 per cent.

Tentative diagnosis of gastro-intestinal upset, early acute infection, or possible drug poisoning was made.

Colonic irrigation, external heat applications, and glucose water by mouth, brought prompt improvement, and within four hours he appeared as a child recovering from a sedative drug. He was discharged three days after admission with a diagnosis of gastro-intestinal toxemia.

The second admission was on October 7, 1932. He had a history of persistent vomiting the day before, and on admission was stuporous, pale, and carpopedal spasm was present. The skin showed definite evidence of dehydration. Impression: Infantile tetany from alkalosis due to persistent vomiting.

Laboratory findings: Blood sugar content too low to read, urea nitrogen 17 mgs. per cent; CO<sub>2</sub>, 30 vol. per cent; creatinine, 1.3 mgs. per cent; urine was acid, S.P. 1.028; very faint trace of albumin, no sugar, acetone 4 plus, diacetic acid negative.

From the laboratory findings it was concluded that the cataleptic stuporous state was due to hypoglycemia. After the administration of six ounces of glucose water by mouth the child rapidly came out of the stupor. He was discharged in three days.

One month later he was again admitted looking the same as he had on previous admissions, but his liver was enlarged three fingerbreadths below the costal margin.

Laboratory findings: Blood sugar content was too low to read; calcium 11 mgs. per cent; phosphorus 4.9 mbs. per cent; urea nitrogen 13 mgs. per cent. He improved rapidly after glucose in saline was administered. Four days after admission his general condition was good. Blood Wassermann test was negative; and the bromsulphophalein test was normal. Several twenty-four hour urine specimens were free from sugar. This definitely indicated that renal glycosuria was not the cause of the hypoglycemia. Three glucose tolerance tests with 1.75, 3.4, and 4 gms. of glucose per kilogram of body weight all showed increased tolerance with apparent abnormal balance in the factors which control carbohydrate metabolism.

On November 14 and 19, the patient had mild attacks of hypoglycemia shock which were promptly relieved by the administration of orange juice. The mother opposed an exploratory laparotomy for a suspected cyst or tumor of the pancreas. On December 4, he was discharged with a diagnosis of hypoglycemia due to hyperinsulinism.

Eight days later he was again admitted suffering from diarrhea and vomiting for two days previous to admission. Intravenous injections of glucose brought about a prompt cessation of symptoms. Two days later he was discharged.

The fifth admission was made nine months later. The child was hurried into the accident ward dead. During the nine months previous to admission he had had only one attack of shock due to hypoglycemia. He had had pneumonia in February with a temperature of 104 without developing any signs of hypoglycemia and had been in good health until he had had a convulsion on the morning of his last admission and had never regained consciousness.

Necropsy was performed fifteen hours after death. The body was markedly dehydrated; the thymus was perhaps enlarged, but showed only normal tissue in the histological examination. The thyroid seemed definitely subnormal in size, and weighed less than five grams; it showed inactive



structure and numerous acini were filled with homogenous dark stained colloid.

The spleen, pancreas, kidneys, gastro-intestinal tract, brain, and pituitary were all grossly normal.

The adrenals were apparently diminished in size, but the histological examination showed normal, well preserved tissue.

The liver was of normal size and consistency, but showed some acute congestion, with marked granularity of the cytoplasm of the individual cells. In some fields there was early nuclear changes such as pyknosis.

Sections taken from numerous blocks throughout the pancreas showed hyperplasia of the islands of Langerhans, a periductile fibrosis more noticeable in the head and body of the organ, and an acute necrosis in the head of the pancreas associated with dilatation and catarrhal obstruction of the pancreatic duct.

The author calls attention to the fact that in children with sudden weakness, muscle tremor, strabismus, convulsions, and coma may be due to hypoglycemia and that blood sugar determination should be routinely performed when such symptoms arise.

The depressing effect of infection upon insulin production was strikingly evident from the fact that no attacks of hypoglycemia shock occurred during an attack of severe bronchopneumonia.

A low carbohydrate, high fat diet has been recommended in order to avoid the stimulating effect of carbohydrate on insulin production. And recently H. J. John has recommended the use of insulin in the treatment of hyperinsulinism; this eliminated any demands on the islands of Langerhans and if the dosage is properly adjusted and the patient does not get insulin from the pancreas the lower level of shock should not be reached. The pancreas is placed at physiologic rest and hypoglycemia is eliminated.

#### **The Allergic Theory of So-Called Thymic Death.** George L. Waldbott, M.D., Detroit. J. A. M. A., August 31, 1935, Vol. 105, No 9, Page 657.

Although the theory that thymic death and anaphylactic shock are closely related has been suggested in the literature, it has not gained adherents rapidly, probably because until recently anaphylactic reactions were thought to occur only in animals—not in man, and that the phenomenon occurred only when antigens of protein nature were injected into the body.

Medical literature has for many years associated with the so-called thymic diathesis features that are now considered allergic—such as a tendency to nasal and bronchial catarrhs, to enlarged tonsils, adenoids, and other lymphoid structures, to eczema, and to eosinophilia, as well as a tendency in a family toward these conditions. The author has observed sudden deaths in allergic families which presented a picture similar to thymic death on autopsy.

#### **HUMAN ALLERGIC SHOCK**

It has been shown that allergic shock in man depends primarily on the following factors: (1) the degree of the individual's sensitivity—whether inherited or acquired by previous sensitization as for instance to horse serum; (2) the size of the overdose of the injected antigen; and (3) to the rapidity of absorption. In the last case death was usually found to be due to the accidental injection into a vein.

The manifestations of allergic shock are varied. Usually there is a predominance of respiratory and dermal symptoms due either to true allergic edema of the urticaria type or to edematous hemorrhagic lesions which are followed by necrosis. Convulsions,

hematuria, and severe gastro-intestinal pains are other manifestations which often occur.

If the antigen (which may be non-protein in nature) is injected intravenously death may occur so swiftly that symptoms relative to any particular organ may not be identified. It has been shown in fifty cases which the author studied that ingestion of food, taking of drugs by mouth, inhalation, contact of the antigen with the skin, cold, and heat are factors other than the injection of an antigen which have produced allergic shock.

The author reviewed 104 autopsies from various hospitals in which a diagnosis of thymic death had been made. He found a great deal of evidence which suggests that the condition termed "thymic death" is a pre-allergic phenomenon, not similar to or identical with anaphylactic shock, but probably occurring before the body has had an opportunity to build up a defense mechanism against the stimulus which might later have produced only asthma or some other allergic manifestation.

Since the knowledge of this condition is really limited and a matter of so much controversy, it is impossible to outline definitely measures of prevention and treatment. Epinephrine usually controls urticarial lesions, and in some cases the administration of extremely small doses of the sensitizing antigen, if it is known, in a manner similar to that in which allergic conditions are controlled at the height of their development, may avert fatal outcome of the shock—that is of course if death does not occur instantly.

The author presents a study of the allergic theory of so-called thymic death, and his studies indicate that the possibility of allergic phenomenon should be carefully considered before it is ruled out in a suspected case of thymic shock.

#### **The Significance of Pyuria in Children.** Alexander B. Hepler, M.D., Seattle, and Russell T. Scott, M. D., Lewistown, Idaho. J. A. M. A., August 17, 1935, Volume 105, Number 7, Page 499.

Since pyuria is the most important sign of urogenital disease in children, and since all previous studies regarding the amount of pus that was supposedly present in the urine under normal conditions had been reported without reference to the methods of collection and examination of the specimens, the authors present a comprehensive study of the urines of 694 children (400 males, 294 females) who were admitted to the Children's Orthopedic Hospital for a period of nine months, March, 1931, to January, 1932.

The systematic study was conducted as follows: A centrifuged urine specimen was examined when the child was first admitted to the hospital. If this examination disclosed any pus, an uncentrifuged specimen was examined. If this examination was positive, a catheterized specimen, both centrifuged and uncentrifuged, was examined. If there were no pus cells in these specimens, a note was made of any urinary symptoms and of any past history of urinary complaints; if these were negative the examination was dropped. If, however, they were suggestive of urinary disease another centrifuged specimen (catheterized) was examined. If there were pus cells in the above specimens the history was carefully checked for urinary symptoms, plain roentgenograms were taken, functional tests were performed, and excretory urograms and complete renal study were made. If this examination was negative another catheterized specimen was examined.

Pus was found in the voided centrifugated specimens of ninety-nine per cent of the patients in amounts ranging from an occasional to over twenty cells per high dry field; while pus was found in

only thirty-six per cent of the uncentrifugated voided specimens.

Pus was found in thirteen per cent of the catheterized centrifugated specimens, and in nine per cent of the catheterized uncentrifugated ones.

It is obvious therefore that an uncentrifugated catheterized specimen should be examined if a quantitative estimation of pus in the urine is to be made.

#### INCIDENCE OF URINARY TRACT DISEASE IN THE PRESENCE OF PYURIA

Following the above plan of examination the authors found that a complete renal study was indicated in sixty-six cases. Their results indicate that the amount of pus in urine properly collected is no indication either of the kind or severity of the urinary tract disease.

There were three patients with advanced infected hydronephrosis with less than one pus cell per high dry field, and in one with an osteovesical fistula from sclerosing osteomyelitis of the ilium there was a rare pus cell, while in another with a similar condition there were many pus cells. Fifty per cent of the twenty-six patients with demonstrable urinary tract disease had pus in the urine in amounts well under what is quoted in the literature as a normal pus content.

Of the sixty-four children with pus in the catheterized urine, only thirty-seven per cent had demonstrable urinary tract disease.

The authors' studies indicated that urinary complications in children with bone and joint tuberculosis are not common, and that prolonged immobilization on frames or in casts does not tend to urinary stasis, infection, and stone formation.

The necessity for negative cultures as a criterion of cure in urinary infection in children has been emphasized by Helmholtz. The authors conducted a comparative study of the fresh smear and culture method of determining the type of organisms in 183 urines. The results of these two methods coincided in 170 or ninety-two per cent of the cases. This would indicate that the fresh smear method is entirely satisfactory for routine examinations and that these examinations should be made.

By HUGH JETER, M.D.

**Some Problems in Pregnancy and Diabetes. An Analysis of Twenty Pregnancies in Seventeen Patients and a Preliminary Report on 238 Collected Cases in the Literature. David W. Kramer, M.D., Philadelphia, Pa. From the Medical and Obstetrical Departments, Jefferson Medical College.**

The effect of pregnancy upon diabetes is by no means uniform.

It is only conjecture that increased tolerance on the part of the mother is the result of added insulin secretion from the fetus.

Acidosis may exist in the later months of pregnancy without symptoms and signs. Coma is relatively infrequent, but may develop suddenly in later months of pregnancy. Hydramnios is relatively a frequent occurrence in diabetes. The death rate is comparatively high—3.3 to 7.9 per one thousand.

**Fetal Mortality:** One hundred fourteen live births out of 238 pregnancies (forty-seven per cent).

**Management of Diabetes and Pregnancy:** The patient should be impressed with the necessity of cooperating faithfully. Frequent observations should be made. The diet should be ample. In later months hospitalization is advisable. Induction of labor may be necessary in the late months of pregnancy, especially if diabetic coma appears and is

resistant to treatment. Natural delivery is preferable.

When lactation sets in the blood sugar may drop and the dose of insulin must be diminished promptly.

The question as to how we are to advise diabetics who desire children cannot be answered without taking into consideration the condition of the patient and her ability to cooperate fully with the physician.

The successful termination of pregnancy in a diabetic patient will depend upon the severity of the disease, frequent periodic examinations throughout the period of gestation, faithful adherence to the diabetic regime, and the skillful management of the case both by the obstetrician and the internist.

#### EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.  
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**Neuroretinitis Associated with Symptoms of Ergot Poisoning. Daniel Kravitz, M.D., Brooklyn. Archives of Ophthalmology, February, 1935.**

There are no recorded cases that the author could find of this ocular complication in this country. Meier was the first to write of the ocular complications following ergot poisoning. He reported 283 cases of which twenty-three developed cataract, usually bilateral, developing in from six weeks to three months. Later other ophthalmologists and medical men reported similar findings. Amblyopia and cataract were the most important sequelae of the poisoning reported. If the amblyopia was not present, removal of the cataract gave good results. The picture of the fundus is not constant according to these reports. Some of the retinas were slightly discolored and swollen, and the borders of the disks as well as the course of the vessels were indistinct. Others showed an acute hyperemia of the disks and retinas, and the fundi appeared greyish red. In the latter cases the borders of the disks as well as the vessels were clearly outlined. In still others there were pallor of the retinas and disks with contraction of the vascular trunks.

The two forms of ergot poisoning are gangrenous and convulsive. Symptoms of the gangrenous form are general lassitude, vague lumbar pains or pain in the limbs, dulling of the intellect, swelling and inflammation of the affected parts with violent burning pains, alternating periods of intense heat and cold, lividity, frigidity and numbness of the skin, and dryness and blackness of the affected area. Variations from the loss of nails to the loss of limbs are recorded. Symptoms of the convulsive form are severe fits and muscular contractions, permanent epilepsy or feeble-mindedness (among survivors), and in the mild form a feeling of pins and needles through the body. The ocular complications occur mainly in the latter form. Some individuals are more susceptible to this drug than others. One person may be affected adversely by small amounts of ergot while others may take relatively large doses without ill effect.

In this article the history of the drug is given dating back to the eating of rye bread by the Teutons and Russians. It is noted that comparatively the people of this country consume very little rye bread. If the rye is planted during the rainy season and this is followed by a hot spell, the contamination is greatly increased. Ergot deteriorates on standing, so the longer the rye is stored before it is used the less is the chance of poisoning. In the



olden times it was recognized that this form of poisoning occurred most frequently among the poorer classes and it was particularly noticeable after a previous crop failure when the new rye was used for bread.

The case reported is that of an Italian woman, age twenty-two, whose chief complaint was loss of vision for the past two months. She had been married for five years and had two children living and well and had never had any miscarriage or abortions. She came in to the medical department of the Brooklyn Hospital on January 26 and it was not until a month later that she was admitted to the ophthalmological department. At the time of entrance she also complained of pain in the occipital region and in the left shoulder and arm. Syphilis, encephalitis, optic neuritis, hereditary and other neurologic diseases had been ruled out by the medical department. Vision in the right eye was 20/200 and in the left 20/50. Glasses did not improve her vision. The fundus findings and the fields are given in the report. It was not until she came to the ophthalmological department that the history was elicited of her having had a "missed" period two months previously to her appearing at the hospital. For this she had taken some pills purchased from her druggist containing one grain of ergot.

#### **Treatment of Thrombosis of the Lateral Sinus.** Philip E. Meltzer M.D., Boston. *Archives of Otolaryngology*, August, 1935.

This article presents the results obtained during the twelve years, from 1921 to 1932, inclusive, at the Massachusetts Eye and Ear Infirmary. Eight tables are given under the following headings: Analysis of the Cases of Resection of the Mastoid; Age Incidence; Analysis of the Conditions Found When the Lateral Sinus Was Incised; Post-operative Complications; Incidence of Metastasis; Analysis of the Conditions Found When the Lateral Sinus Was Incised in Cases of Metastasis; Analysis of the Fatal Cases; and Length of Time Between Mastoidectomy Ligation and Opening of the Sinus. The author's summary is given below.

Symptomatically it is impossible to distinguish between sinus thrombosis and phlebitis.

In a total of 4,961 cases of resection of the mastoid the diagnosis of sinus thrombosis was made in 161 cases, indicating that it occurred once in approximately thirty-one cases. Sinus thrombosis is the most frequent complication of mastoiditis, the greater number of cases occurring in association with acute otitis. It occurred more often in patients between eleven and twenty years of age, the curve of incidence tapering off sharply at both extremes of age.

Metastasis was an uncommon complication before ligation of the jugular vein. Involvement of the joints was the most common complication, the greatest number of cases occurring after ligation and treatment of the sinus. Involvement of the joints adds to the seriousness of the disease as it may prove to be the focus which continues to feed organisms into the blood stream.

Blood cultures are of value as an aid in establishing a diagnosis or at least in focusing attention on the lateral sinus. In the presence of continuing symptoms negative results of blood cultures should not contraindicate examination of the sinus.

The Ayer-Tobey test is a valuable diagnostic aid. The reliability of the test is dependent on the experience and carefulness of the person making the test.

The records bear out definitely the common knowledge that the appearance of the sinus gives

no indication of what may be within it. One has more reason, however, to suspect injury to the endothelial lining in cases in which there is a perisinuous abscess.

Sinus thrombosis is not necessarily fatal if not treated surgically. Operation is always indicated, in my opinion as the best means of aiding the patient to overcome the infection, affording drainage which thereby tends to limit the disease. Extirpation of the focus of disease is an impossibility; the surgeon merely aids the patient. The battle for supremacy is between the infecting organism and the patient's power of resistance.

Post-operative sinus thrombosis occurs infrequently as compared with the manifest and latent types of thrombosis.

Secondary infection of the wound of the neck occurs fairly commonly.

The percentage of fatalities in general may be considered to be between twenty and thirty per cent. In this report the patients who were hopelessly ill on admission were excluded. In the combined series there were 148 patients, of whom thirty-two, or 21.7 per cent, died and 116, or 78.3 per cent recovered. Excluding intracranial disease sinus thrombosis must be considered to have a relatively high mortality rate.

#### **Some Remarks on the Recession Operation for Squint.** J. G. Milner, London. *The British Journal of Ophthalmology*, August, 1935.

There is a table given showing the results obtained in a series of fifty recession operations performed between 1932 and 1934. This table includes the Case, Date of Operation, Type and Angle of Squint, Operation, Immediate Result, Late Result and Remarks. From the table he shows: (1) Thirty-seven cases, or seventy-four per cent, were cosmetically straight (five degrees convergence is regarded as straight) after periods varying from three months to three years. (2) Ten cases were straight only with glasses, converging about ten degrees without glasses. (3) The average angle of reduction was twenty-four degrees. (4) Of the thirteen cases not straight, nine were alternating, and of these nine the original angle of squint was thirty degrees or more in seven. (5) Nine cases, immediately after operation were convergent ten degrees or more, but that all of these became less convergent later. (By the immediate result he means the result at the time of the patient's discharge from the hospital, ten days after the operation).

A synoptophore is used to measure the angle of the squint previous to the operation. Evipan is used for anaesthesia if the patient is a child. The incision is made three mm. from the limbus through the conjunctiva. He uses a silk stitch in the conjunctival flap for traction in addition to keeping the flap located for the closure at the end of the operation. He cautions against opening the rectus sheath because of the ensuing bleeding and probable formation of adhesions later, lessening the amount of the recession. A squint hook and later a Prince's forceps are next used. When cutting the muscle he leaves a small stump on the sclera which helps later in rotating the globe. Before the sutures are inserted, the operator must be sure that the muscle is entirely free. He uses 000000 catgut on a curved squint needle (split-eye). The method of inserting the sutures is illustrated. The muscle is re-attached in the region of the equator, care being taken not to pierce it as it is very thin at this point. The sutures are inserted about eight mm. apart in order to keep the muscle band flat. The conjunctiva is closed with silk sutures. The silk sutures are removed in one

week. After operation both eyes are bandaged and the child kept in bed for one week. The eyes are irrigated once daily unless occasion demands that it be done more often. At the end of the week the bandages are removed and the child starts wearing glasses immediately unless there is no refractive error. If a second operation is deemed necessary the author prefers waiting several weeks before it is done.

**An Anatomical Investigation of Blood Vessels of the Lateral Nasal Wall and Their Relation to Turbinates and Sinuses.** Howard B. Burnham, Toronto. *The Journal of Laryngology and Otology*, August, 1935.

There are twenty-two pages of material including drawings, plates and microphotographs. The subject the author takes for investigation is practically ignored in the anatomies of the present day. He has evidently spent a great deal of time and effort in arriving at his conclusions, which are reproduced below:

**BONY CANALS.** Large canals present in the central part of the middle, and posterior half of the inferior turbinate bones contain: (1) terminal branches of the turbinate arteries; (2) veins ("jacket plexus"), which form an essential part of the venous pathways; (3) nerves. Three definite canals are present in the posterior half of the inferior turbinate. The uppermost of these canals contains vessels for the antrum and its connection with the latter through the "uncinate aperture" which is described. This "aperture" is a very important and constant naso-antral bony opening, inferior to the uncinate process, through which the antrum obtains a large part of its blood supply. In the central one-third of the middle turbinate, a single canal terminates anteriorly in three smaller divisions.

**VENOUS PATHWAYS.** The term "venous pathways" has been used to indicate the large channels of veins which carry the blood over the lateral nasal wall to the sphenopalatine foramen. They are three in number: (1) inferior turbinate, (2) middle turbinate, (3) superior turbinate venous pathways. Each pathway is made up of erectile vessels which pass into either periosteal or "intraosseous" veins and each of these joins the "jacket plexus" of veins within the bony canals of the turbinate. They then leave the canals, passing into periosteal veins again before reaching the sphenopalatine foramen. The "intraosseous" veins are mainly present in minute bony canals in the anterior half of middle and inferior turbinates and have not previously received consideration in the literature. The erectile tissue empties directly into these "intraosseous" veins; very few arterioles are associated with them. The erectile tissue also passes into the periosteal vessels which accompany the larger arteries. These periosteal veins enter the large bony canals in the posterior half of the turbinate and are continuous with the "jacket plexus" which the latter contains. A few of the periosteal veins also accompany the arteries which pass over the lateral nasal wall to the sphenopalatine foramen. They are, however, of distinctly minor importance compared to the large bony channels just referred to, and cannot be considered as the important venous pathway.

**VENOUS LAYERS.** The superficial veins of the lateral nasal wall present such sharp turns and twists in their courses that they may be described as convoluted. This is particularly true of the erectile tissue areas. The periosteal veins, on the other hand, both those found within the large turbinate canals and those on the surface, have a more wavy course with much fewer and less abrupt

turns. The veins of the sinuses are of the periosteal type; and from the plexus about the ostium, take a comparatively straight course into the sinus. This ostial plexus is but a few millimetres in width, except in the case of the antrum, in which it covers a large part of the medial wall. The vessels pass into the sinus and either end in capillaries or are cojoined to collateral branches. In the sinus, no definite superficial layer of veins has been found and a distinct contrast is evident between the straight coursed veins of the sinus and the convoluted one of the lateral nasal wall. The erectile (cavernous) tissue vessels present pouches or pockets in their walls continuous with the lumen of the vessel but enlarging it considerably.

The author closes with a statement of the clinical significance of his anatomical findings.

## DERMATOLOGY, RADIUM AND X-RAY THERAPY

Edited by William E. Eastland, M.D.  
LAIN-ROLAND-EASTLAND CLINIC  
705 Medical Arts Building, Oklahoma City

### Report on X-Ray Treatments in Gas Gangrene Cases. J. J. Faust, M.D. *Radiology*, Vol. XXII, No. 1, January, 1934, 105-106.

After the author read the preliminary report on the successful treatment of six gas gangrene cases given by Dr. Kelly, he was inspired to treat five cases of his own. The technic used in these treatments was as follows: Five-inch spark gap, five ma., forty cm. distance from target to skin, with 0.5 mm. al. filter for three minutes over each involved area. The number of treatments vary from six to ten, two treatments being given a day in some cases. The author is quoted in the following statement: "The serum used was supposed to be specific for *B. welchii* and *B. vibriion septique*, whereas two cases had *B. clostridium tertium* infections. Since the serum was not positive for this organism it may not have had anything to do with the results and the x-ray may have been entirely responsible for the cures." In all cases recovery was made regardless of the anatomical location, and the essayist felt that x-ray was a definite aid in the recovery. He makes a comment stating that in future cases he will try x-ray alone unless the results are not favorable within a reasonable length of time.

### Carcinoma of the Lip and Mouth. Charles L. Martin, E.E., M.D. *Radiology*, Vol. XXII, No. 2, February, 1934, 136-146.

The author presents his method of treating carcinoma of the lip and mouth with means principally of platinum needles, deep x-ray therapy, and superficial x-ray therapy. He relates the following principles upon which this work is dependent:

"1. Six to twelve erythema doses of irradiation are needed for the actual cure of squamous-cell carcinoma.

"2. Recovery is more rapid and surrounding normal tissues show a quicker return to normal when the treatment is administered over a prolonged period, usually from seven to fourteen days.

"3. Short wave lengths produced by heavy filtration lessen the injury to surrounding normal tissues but are not essential in treating superficial lesions on the lip.

"4. An attempt should always be made to produce a cure with the first series of treatments,



since the second attempt is never so successful and may produce injurious effects.

"5. Infection and irritation (tobacco, bad teeth, etc.) interfere with healing and must be eliminated during treatment."

The technic in the treatment of epithelioma of the lip is first discussed. It is briefly stated that the author's plan is daily x-ray treatment of lightly filtered x-ray until a total of six to twelve erythema doses have been given. A review of 119 cases traced for more than five years shows that 96.3 per cent of the patients are alive and well in those cases in which there was no lymphatic involvement. In certain instances weak radium needles are used interstitially in the treatment of lip malignancies; for example, in those cases which have been subjected to inefficient x-ray treatment and also in those cases in which the lip lesion extends into the commissure of the mouth. It is pointed out that intra-oral carcinoma is much more difficult to treat and to obtain good results than lip lesions. Attention is called to the work done in large radiological centers where radon seeds can be obtained, but the author points out the necessity of using heavily filtered platinum radium needles of low intensity. These needles vary in length from one cm. to four cm. The treatment is based upon the fact that it takes 0.6 of a milligram of radium in a one cm. needle to destroy one cubic cm. of squamous cell carcinoma in a period of seven days. Of thirty-seven cases treated by Martin, thirty have been treated more than one year. Although this duration is much too short to make any significant comment, nevertheless it must be stated that the primary lesions disappeared in all except three patients, and these were in cases who failed to exercise hygienic precautions in regard to tobacco and alcohol. Fifty-six per cent of the cases have been alive more than one year, and forty per cent have shown no evidence of carcinoma for a year or more. Two cases have remained alive and well for more than three years. It is of interest to note that regardless of the grade of the tumors the clinical results were equally good. The grading could be considered of value insofar as determining the possibility of metastases. In discussing carcinoma of the pharynx, attention is called to the mechanical inaccessibility of the part with platinum needles. With radon seeds this can be managed better. The radio-sensitivity of tumors in this region is greater than the histological findings indicate. The author has followed the idea advanced by Coutard in regard to deep x-ray therapy given externally. The author's conception of this technic is as follows: The filter is 0.75 mm. cu. and one mm. al. given in one-half erythema doses daily until ten or twelve such doses have been administered. This produces in two or three weeks a marked desquamation but no ulceration, followed by satisfactory healing. Martin states that such a technic may not be curative but it is highly palliative. In discussing cervical adenopathy, Martin divides these cases into three classes: (1) those in which there are no palpable lymph nodes, (2) those in which the palpable lymph nodes are considered operable, and (3) those having inoperable metastases in the neck. In the first instance it is a moot question as to the proper procedure, many surgeons advising block dissections. Such procedures often cause unnecessary risk when there are no metastatic malignant cells present. In view of the early metastases in lesions in the mouth it is here the author suggests block dissections in case it is done, whereas in lip lesions it is not advised as metastases here are late, if at all. He says that his statistics, as well as those of Duffy, compare favorably with radical surgical procedure. The radiation treat-

ment is by means of deep x-ray therapy to each side of the neck. In the second instance when there are probable operable nodes present in the neck the patient is advised to have an operation. The following criteria is used in determining whether nodes are operable: They must be freely movable and comparatively few, showing no evidence of extension nor must they be broken through their capsules and situated only on one side of the neck. In the event that operation is done, and it is felt that malignant tissue is left behind, radon seeds or platinum needles may be used in suspicious lesions. In the third group in which the cervical nodes are inoperable, Martin classifies these as a radiological problem. To this end he advises internal and external radiation. The long platinum needles are inserted beneath the involved nodes and well beyond them and left in place for seven days. Externally, a one hundred mg. radium pack is placed in platinum capsules and left in place for thirty-six hours. Also, the patient is given deep x-ray therapy from the upper jaw to the clavicle. This produces a marked desquamation of the skin and a few areas may show temporary superficial ulceration, but this heals in the course of four to six weeks, leaving the skin soft and pliable and a marked reduction in the size of the malignant gland, as well as definite clinical improvement which may last from four to six months and sometimes longer. This is a very creditable article and time will tell the true merits when five-year cures can be determined.

**Cancer of the Prostate. Bernard P. Widmann, M.D.**  
Radiology, Vol. XXII, No. 2, February, 1934, 153-159.

At the outset of this article it is stated that it is its purpose to evaluate the results of roentgen ray and radium treatment in 152 cases of cancer of the prostate in the radiological department of the Philadelphia General Hospital. All of these cases were advanced and, therefore, could not be regarded as curative in the therapeutic approach. The main value of the paper was to determine the beneficial effects, if any, derived by treating with high voltage radiation and radium as compared to cases in which no treatment was given. To this end, of the 152 cases treated, 82 were selected because they had adequate radiation treatment, and 70 cases selected because no radiation treatment was given. All cases in the series eventually died. Several interesting statistical tables are given, the first of which shows the incidence of the first symptoms as noted by the patients. The second table shows the incidence of bone metastasis, while the third shows the physical findings as presented by rectal examination of the prostate. The author calls attention to Ferguson's classification of the grade of malignancies of the prostate as follows: High, intermediate and low grade malignancies, with an average life of six months, eighteen months and thirty months, respectively. In the latter instance it may last for many years. Moreover, the age incidence was fifty-five, sixty and sixty-five years or over in respective order. The essayist has perused the literature to a certain degree in which he shows the various opinions of different authors in regard to their attitude as to the value of surgery and radiation therapy of carcinoma of the prostate. It is stated that the factor which indicates beneficial effects of radiation is chiefly relief of pain. Among the statistics given it is interesting to note that the duration of life after entrance into the hospital for eighty-two irradiated cases was five and one-half months, compared to two months for seventy

cases without radiation. Of the irradiated cases, seventy-five per cent died within six months after the beginning of treatment, as compared with ninety per cent dying in which no treatment was given. The average total life for the radiated group of eighty-two cases was thirty-one months, compared with the average total life of twenty-five months in the non-radiated group of seventy cases. Also, thirty-four per cent of the irradiated cases were alive at the end of two years as compared to twenty-five per cent of those not receiving such treatment. The technic of the high voltage radiation therapy was given. In eight instances the cases were treated by gold seed implantation but the pathological involvement was so extensive that the results were not satisfactory. In the future such method will be used in those cases which are surgically operable. In bone metastases radiation was used to considerable advantage for palliation. There was no improvement in the bone condition per se. Mention is made of supplementary heavily filtered radium tampons placed in the rectum in which the growth is highly cellular, and it is spoken of favorably, but caution is given in regard to over-dosage. Early diagnosis is difficult, but Widmann hopes that aspiration biopsy will improve this matter. In his final paragraph in the summary it is stated "cancer of the prostate is essentially a radiologic problem. In selected early cases, interstitial radiation with gold seeds or platinum needles should offer great possibilities of improving the end-result."

**The Treatment of Uterine Fibromyomas. Leda J. Stacy, M.D. Radiology, Vol. XXII, No. 2, February, 1934, 212-218.**

This article is developed on a very fair and scientific basis inasmuch as it comprises 320 cases compared from four different angles; that is, those in which myomectomy, hysterectomy, radium therapy and roentgen ray therapy were done. The author prepared a table in which he considers these four different methods of treatment and then gives percentages in accordance with the state of health as to treatment and incidence to secondary treatment. The detailed considerations of health are as follows: (1) good, (2) bad, (3) not improved, (4) menstruation ceased, (5) menstruation became normal, (6) hot flashes, (7) nervousness, (8) pain in the pelvis, (9) subsequent operation necessary, (10) subsequent roentgen-ray treatment, (11) subsequent radium treatment. In compiling such a table it was necessary to make follow-up records and trace as many cases as possible. The incidence of cases traced is very high and, therefore, the results obtained and given in this table are valuable. The author summarizes the results of his efforts as follows:

"Patients having small fibromyomas which do not cause symptoms should be examined semi-yearly to detect any change in size or consistence of the tumor, and must be warned regarding the importance of any change in the menstrual cycle.

"The choice of treatment in cases of uterine fibromyomas that produce symptoms depends on the age and general condition of the patient, the size of the tumor, and symptoms.

"Myomectomy is the most conservative treatment. A woman who is in the child-bearing period of life should be allowed to choose this form of treatment, provided it is made clear to her that a radical operation may be necessary later.

"Hysterectomy is indicated in cases of previous pelvic infection, in cases in which the history suggests complications, as degeneration of the tumor or the presence of a submucous fibroid.

"Roentgen-ray and radium treatment in care-

fully selected cases give excellent results in a high percentage of cases."

### Community Sanitation Program Launched

The greatest program of its kind ever to be attempted in the State of Oklahoma went into action this week by the appointment of Community Sanitation Supervisors in seventy of Oklahoma's seventy-seven counties. The Community Sanitation program is being sponsored by the State Department of Health, headed by Dr. C. M. Pearce, Health Commissioner, acting as agent for the United States Public Health Service, and the State WPA set-up. Technical supervision is under the direction of H. J. Darcey, State Sanitary Engineer and H. G. Payne, Assistant State Director of Community Sanitation.

The State's allotment of funds to carry on the sanitation work is \$2,097,000.00. The object of the entire program is the prevention and control of certain filth-borne diseases, such as typhoid fever, dysentery, diarrhea, etc. Since it is possible to contract these diseases only by eating and drinking germs coming directly from the body wastes, or excreta of afflicted persons, and such germs being spread by flies or surface water drainage to food and water supplies of the public at large, the entire program will be directed to the end of substituting sanitary fly-proof pit type toilets for the open, unsanitary and filthy toilets now in existence. Much research work has been done along this line by health authorities, and it is entirely possible to eradicate these deadly diseases by such sanitation methods.

To the property owner desiring a sanitary fly-proof pit type toilet as a permanent improvement for his property, construction of such toilets will be furnished by the WPA organization FREE. The only cost to the property owner will be the material for construction which usually runs from \$4.00 to \$5.00.

Possibly no project approved by state authorities will mean more to the health of the people of the state than that of community sanitation.

To all property owners who wish to take advantage of this unusual opportunity to not only improve their property but at the same time to do their part toward sanitating their community, helping in the prevention of the spread of filth-borne diseases, we sincerely urge the medical profession of this state to get behind this program and put it over in a big way.

### St. Louis Medical Society Invites Southern Physicians

The twenty-ninth annual meeting of the Southern Medical Association, the second largest medical organization in the United States, will be held in St. Louis, November 19-22.

The unusual clinical facilities of the two medical schools and the numerous hospitals, combined with the high standing of the medical profession, and the excellent hotel accommodations, make St. Louis an ideal city for this medical gathering.

Addresses and papers will be presented by distinguished clinicians, not only from the South, but from all over the United States as well as from several foreign countries.

The St. Louis Medical Society extends a very cordial invitation to all physicians in good standing in their State and Provincial medical societies to attend this meeting.



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# THE JOURNAL

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## TOXIC GOITER\*

J. C. BROGDEN, M.D.  
TULSA

In no branch of medicine or surgery has greater progress been made in the past fifteen years than in the treatment of toxic goiter. The mortality has been reduced from about fifteen per cent to one to three per cent. The work of Crile<sup>1</sup> and Plummer has been most outstanding in increasing our knowledge of the thyroid gland while many investigators, chemists and surgeons have contributed numerous articles on this subject, until today we have a very definite idea as to the functions and activities of the thyroid, while the pre-operative treatment, post-operative treatment and the operative technique are well standardized.

Summarizing this knowledge we know that:

1. The thyroid gland regulates the metabolic activities of the body.
2. It has a definite internal secretion and iodine is the essential ingredient of that secretion and exists in two organic combinations, viz:

*Iodine A* which is insoluble in acid and is physiologically active. This substance was isolated by Kendall in 1915 and given the name Thyroxin.

*Iodine B* which is soluble in acid and is physiologically inactive.

3. At least fifty percent of the iodine in the body is stored in the thyroid gland.

4. The iodine content of the thyroid is directly proportional to the amount of colloid present, and a certain amount of iodine must be present in the gland, else hyperplasia occurs.

Marine and Lenhart showed that:

In normal gland:  
.777 mg. of Iodine per gram of fresh thyroid  
In colloid gland:  
.459 mg. of Iodine per gram of fresh thyroid  
In early hyperplasia:  
.139 mg. of Iodine per gram of fresh thyroid  
In moderate hyperplasia:  
.078 mg. of Iodine per gram of fresh thyroid  
In marked hyperplasia:  
.023 mg. of Iodine per gram of fresh thyroid

5. The degree of hyperplasia is inversely proportional to the iodine content of the gland.
6. The colloid gland is the nearest to a normal condition to which the hyperplastic gland can return and this occurs when iodine is given in the pre-operative treatment of toxic goiter.
7. These conditions may cause hyperplasia of the thyroid, viz:
  - a. Removal of large portion of the gland.
  - b. Iodine deficiency.
  - c. Pre-natal iodine insufficiency in the mother's diet.

From these facts we conclude that an iodine deficiency in the food or water is the important factor in the causation of goiter. However, there are many exciting

\*Read before the Surgical Section, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, May, 1935.



factors, chief of which are: the acute infections such as influenza, tonsillitis and sinusitis, emotional disturbances, fright and grief, financial or physical strain, pregnancy and marital unhappiness.

*Classification of thyroid pathology:*

1. Non-toxic goiter:
  - a. Diffuse—simple and colloid goiter.
  - b. Nodular—adenoma.
2. Toxic goiter:
  - a. Diffuse—exophthalmic goiter.
  - b. Nodular—toxic adenoma.

From this table we see we have two kinds of toxic goiter, viz: toxic adenoma and the diffuse type or exophthalmic goiter. In both hyperplasia is associated with toxicity and iodine is used in preparing both types for operation; however, the results are not as consistent nor as phenomenal in the nodular as in the diffuse type of gland.

How does iodine act in toxic goiter?

Marine thinks "that when iodine is given by mouth in toxic goiter it causes a rapid involution of the gland; large quantities of colloid material are deposited in the alveoli, distending them and causing a mechanical blockage of secretion."

Plummer thinks "that anything that stimulates the thyroid will give the clinical picture of hyperthyroidism. In such cases the normal hormone, thyroxin is not completely iodized. This incomplete thyroxin enters into catabolic reaction faster than the normal stable molecule and metabolism increases. Iodine feeding changes the character of this molecule and iodizes it, thus rendering it normal and reducing the metabolic rate and clinical symptomatology."

So iodine, generally as Lugol's solution, is invaluable in preparing patients with toxic goiter for operation. This has been the big factor in the reduction of mortality, almost entirely replacing ligation of the thyroid arteries and hot water injections, both of which were so often entirely inadequate in many cases. There is a rapid improvement in the symptoms; a gain in weight is soon noted and the me-

tabolic rate falls about 3.7 points per day. However, this improvement is only temporary and is not curative in any case of toxic goiter.

Post-operatively, iodine is also invaluable in preventing and controlling hyperthyroid crises; as much as fifty to one hundred and fifty drops may be given in a few hours and the condition is rapidly brought under control. It is also given in many cases one to three months after operation in small doses, to prevent a compensatory hyperplasia.

Hyperthyroidism, or toxic goiter: Crile defines it as "a state of hyperpermeability of all the cells of the body. The cells becoming more sensitive and more easily stimulated, all metabolic activities are increased." The thyroid gland in this condition may or may not be enlarged. There is no relation whatever between the size of the gland and the degree of toxicity present.

The diagnosis of hyperthyroidism may be very easy in a well developed case; while again, no more difficult problem may be encountered, especially in a patient who has not developed the typical symptoms. The conditions that simulate hyperthyroidism more or less are: the neurasis of the menopause, neuro-circulatory asthenia, syphilis of the central nervous system, encephalitis, psychosis, tuberculosis, paroxysmal tachycardia and organic heart disease. The diagnosis is only made by thorough study and observation of the patient, together with the use of all the facilities of the x-ray and

COMPARISON OF BLOOD IODINE AND BASAL METABOLIC RATE IN PATIENTS WITH HYPERTHYROIDISM

Case No.	Microgram per 100 c.c. blood iodine	Basal Met. Rate
1	19.5	Plus 37
2	24.2	Plus 23
3	17.9	Plus 4
4	24.2	Plus 34
5	38.7	Plus 53
6	49.8	No basal rate
7	17.9	Plus 14
8	21.5	Plus 57
9	11.1	Plus 70
10	23.7	Plus 19
11	20.9	Plus 70
12	42.4	Plus 58
13	25.6	Plus 34
14	28.4	Plus 60
15	28.9	Plus 51
16	15.3	Plus 22
17	21.2	Plus 49

clinical laboratories. Repeated metabolic tests should always be done especially in those cases in which the pulse rate, loss of weight and other important symptoms do not check with the metabolic reading. Metabolic tests are as a rule from ten to twenty per cent higher than they really are, due to the patient not being accustomed to the test and inexperienced operators doing the test. Also in encephalitis, lympho-sarcoma, carcinoma of the liver, and in some of the diseases of the blood there is an elevation of the metabolic rate. An exhaustive study of the patient is always more reliable than one or more metabolic tests.

The amount of iodine in the blood, in a normal person, is six to nine micrograms per 100 c.c. of blood. In the above table we see that it is very high in hyperthyroidism but there is no definite relation between the increase of the iodine in the blood and the increase in the basal metabolic rate. In case nine the basal rate is plus seventy while iodine is only slightly increased or 11.1.

Recently Hurxthal has shown that the blood cholesterol is low in toxic goiter and high in hyperthyroidism and is brought to normal by pre-operative preparation and thyroidectomy. The value of this test lies chiefly in the diagnosis of border line cases of hyperthyroidism.

*Symptoms:* The symptoms of hyperthyroidism may be divided into two classes:

*Metabolic:*

- Increased pulse rate.
- Increased sweating.
- Increased appetite.
- Heat intolerance.
- Loss of weight and strength.
- Cardio-vascular changes.
- Elevated B.M.R.
- Tremors.

*Sympathetic:*

- Nervousness.
- G.I. disturbances.
- Ocular changes—
- Von Graefe's sign.
- Stelwag's sign.

The Metabolic symptoms can be produced by giving thyroxin to normal person or to a hypothyroid. The Sympathetic

symptoms can not be produced by giving thyroxin.

All or only a few of these symptoms may be present, and in varying degrees of intensity, depending upon the degree of toxicity, the length of time the patient has had the disease and the type of goiter present. We should always remember that this disease always progresses but there are cycles of remission and cycles of exacerbation and no doubt some of the goiter remedies owe their virtue to this fact.

*Pre-operative preparation of patient:*

Absolute rest both mental and physical. No visitors, excitement, etc. Careful history and physical examination; x-ray and laboratory studies, including electro-cardiogram, metabolic tests; x-ray of chest and laryngeal examination in every case.

High carbohydrate diet; this lessens metabolism and supplies caloric needs of the body.

Fluids—Three to four thousand c.c. every day.

Mouth and teeth—Frequent brushing and improving any septic condition found.

Lugol's solution—Ten to fifteen drops three times a day for two or three weeks. Sedatives for rest.

Digitalis in all cases of myocardial involvement.

Transfusions of whole blood if necessary.

Repeated basal metabolic tests should be taken every five or six days and if possible the reading should be not more than plus thirty, together with a gain in weight and a general improvement in patient's symptoms before operation is done.

*Anaesthesia in Toxic Goiter:* I think there are only three anesthetic agents that should be used in goiter surgery:

1. Local infiltration with one-half to two per cent novocain.
2. Local infiltration plus nitrous oxide.
3. Avertin, local infiltration and nitrous oxide.

The first two are most generally used and are satisfactory in the majority of cases. They allow the surgeon to talk to the patient at any time during the opera-



tion; also the patient can cough or strain just before wound is closed to see if any vessel bleeds. This is very important and may avert a serious post-operative hemorrhage. However, in very sensitive, nervous and apprehensive patients I have used, and very satisfactorily, a small basal dose of avertin. We know that excitement, increased nervousness, and apprehension cause surgical shock and post-operative crises. Avertin prevents this and I am convinced it has a field of usefulness in thyroid surgery.

#### THE ESSENTIAL POINTS OF THYROIDECTOMY

*Position of Patient:* Body should be elevated, head thrown back with pad under neck, is the best position especially in short or fat individuals.

*Adequate Exposure:* This is obtained by wide transverse incision with high separation of the pre-glandular muscles from the cricoid cartilage well down into the episternal notch.

*Mobilization* of the gland by ligating superior pole first and gently lifting the gland out of its bed. Always apply clamps to superior pole from within outward after first inserting forefinger beneath the superior pole.

*Tying the lateral* thyroid veins before exposing all of the gland should be done leaving post capsule and a thin layer of thyroid tissue posteriorly. This region is "no man's land" and no manipulation should be done in this area, else the recurrent nerve will very likely be injured.

*Careful dissection* over the trachea is important. Plenty of trained, efficient assistants—This is not a one man operation and good assistance is an absolute necessity.

*Drainage:* I always use one or two small rubber tubes or gauze drains which should be removed in twenty-four hours; they carry off toxic secretions as well as some oozing, which is characteristic of every hyperplastic gland and prevent trouble from concealed hemorrhage, pressure on trachea, etc., and if removed early, do not cause any deformity of the scar.

*Never over operate patient.* The surgeon should study patient for one to two weeks before operation as he should know and measure as accurately as possible just

how much operative trauma his patient will stand. The anaesthetist should also watch patient closely and inform the surgeon of any pain, discomfort or change in the pulse rate or color, in the patient at once. If in any doubt, operation should be stopped immediately, the wound packed and patient returned to her room. The operation can be finished one to four days afterward when condition has improved. A living and well patient with two operations is much better than a fatality caused by trying to complete the operation regardless of patient's condition.

*Complete Hemostasis:* Toxic goiter patients do not tolerate trauma or loss of blood. So clamping and tying all bleeding vessels, especially the superior and inferior thyroid arteries and the lateral thyroid veins, is very important. Good exposure, clean dissection of the gland, and being certain the wound is dry by having patient cough before closure is done, will prevent many post-operative hemorrhages. Recently, I have been doing ligation of the inferior thyroid artery, outside of the capsule, after the resection is complete, using a small aneurysm needle, according to Pemberton's<sup>7</sup> method, and I believe it to be a very good procedure.

*How much gland to leave:* There is no absolute rule, but the younger the patient, the more toxic the patient, and in the gland that is very hyperplastic, the smaller the amount of gland tissue should be left. Generally, too much gland is left because of fear of injuring the recurrent nerve and parathyroid glands. In all cases a very small portion of both lobes is sufficient to leave.

#### *Dangers during operation:*

1. Hemorrhage.
2. Shock.
3. Injury to recurrent laryngeal nerves and parathyroid glands.
4. Injury to trachea.

The first two conditions have already been discussed. Injury to the recurrent nerves may occur in every operation, because unfortunately, they have no constant position in relation to the gland and again may often be displaced by the growth of the gland itself. This is especially true in multiple adenoma.

The recurrent nerve, in about sixty-five per cent of cases, lies in the tracheo-oesophageal groove; in the remaining thirty-five per cent it lies in contact with the posterior capsule or within the gland itself. So injury to one nerve will surely occur to every surgeon who does much thyroid surgery. However, good exposure, gentle handling, avoidance of any trauma to region posterior to the gland and leaving the capsule with a small portion of thyroid tissue at the posterior border, generally avoids injury to both nerves, which is the worst catastrophe that can happen to the thyroid patient.

*Post-operative Treatment:* This is an important phase and consists of:

1. Absolute rest and quiet; no visitors.
2. Fluids—Three to four thousand c.c. of fluids every day by hypodermoclysis; per rectum as Murphy drip; intravenously and by mouth. Normal saline solution with 1/32 per cent novocain under the skin and five to ten per cent glucose solution intravenously (125-500 grams of glucose in twenty-four hours) and fruit juices by mouth are very important.
3. Lugol's solution may be given as fifty drops in one thousand c.c. of physiologic salt solution immediately following operation (Lahey's method). Or, three c.c. in cream per rectum after operation and one c.c. in fruit juice three times a day for three days (Crile's method). I prefer fifty drops in salt solution intravenously immediately following operation, repeating it in toxic cases as indicated.
4. Sedatives: Morphia, gr. 1/6 to 1/4 every three to four hours is almost essential in insuring rest and quiet immediately following operation. It is also good in marked tachycardia but here digifolin one c.c. every hour for five or six doses is very valuable.
5. For hyperthyroid crisis with high temperature, ice packs, ten to thirty, from feet up to costal border are very efficient, and used with morphia, digifolin, large amounts of fluid and Lugo's solution, have enabled us to combat this complication successfully.
6. Transfusions of whole blood are very useful but are only used in the very toxic and feeble patients.

7. Watch for complications constantly; the most important one is hemorrhage. This is generally recognized by tightness in the neck, dyspnea, pallor, rising pulse and prostration, and calls for prompt re-opening of the wound in her room, ligating bleeding vessel or packing wound. Transfusions, intravenous fluids and other measures are then used.

8. Stridor or Dysphagia, or both, generally indicates impairment of function of the recurrent laryngeal nerves or oedema of the glottis. Laryngeal examination should be done at once to determine condition of vocal chords. If condition of patient demands it, do a tracheotomy early before cyanosis and exhaustion intervene. This is imperative if a mortality is to be averted.

9. Tetany: This is due to injury or removal of the parathyroid glands. The position of these glands is not constant and no doubt one or more are often removed at operation. Tingling of the hands and feet and around the mouth, with circumoral pallor are the earliest symptoms, being followed by carpal spasm. Parathormone one-half c.c. subcutaneously or intravenously with calcium lactate by mouth in thirty to sixty grain doses soon bring relief.

10. Oxygen therapy for chest complications such as broncho-pneumonia, tracheitis, etc., is very useful.

In conclusion success in goiter operations depends upon careful study of the patient; attention to the smallest details; complete pre-operative preparation and post-operative treatment; and in always under-operating, rather than over-operating, the weakened and partially exhausted patient. We know that any operative procedure on the body and especially on the thyroid gland acts as a powerful thyroid stimulant. This begins within a few minutes, reaches its height a few hours after operation is over and lasts several days. The following table showing the post-operative increase in blood iodine following various surgical procedures, is very interesting and impresses one with the careful preparation necessary if hyperthyroid crises are to be avoided.



CHANGES IN BLOOD IODINE FOLLOWING  
SURGICAL PROCEDURES

Pre-operative Micro-grams of Iodine per 100 c.c. Blood	Post-operative Micro-grams of Iodine per 100 c.c. Blood	Type of Operation
9.2	23.8	Catheterization of Ureters
6.8	23.3	Prostatectomy
8.9	36.4	Appendectomy
12.1	52.4	Left nephrectomy. D and C
7.1	61.2	Exploratory laboratory. Cecosto
6.7	8.0	Encephalogram
15.3	43.5	Laminectomy
8.4	13.7	Incephalogram
8.3	20.5	Right adrenal denervation
11.9	21.6	Left adrenal denervation
14.3	46.3	Left adrenal denervation
8.4	24.2	Thyroidectomy. Excision of cyst
8.3	11.1	Alcohol injection, nerve
6.5	6.1	Removal of cataract
5.9	19.5	Transurethral resection
22.9	45.8	Thyroidectomy
6.7	7.1	Hemorrhoidectomy
11.8	72.5	Thyroidectomy
8.2	10.1	Removal of cataract

Also, no patient should be dismissed after operation until every effort is made to eliminate all foci of infection, and mental and physical strain, as these tend to cause a recurrence of the hyperthyroidism.

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## DISCUSSION

Dr. LeRoy Long: Dr. Brogden has given us a very intelligent and comprehensive survey of the generally accepted knowledge about goiter to those who are familiar with the subject. I wish to mention three points. First, in the border line hyperthyroidism of which he spoke, there is sometimes great difficulty in the differential diagnosis of neuro-circulatory asthenia and hyperthyroidism. I person-

ally find this one of the most difficult problems. Perhaps the greatest help in this differential diagnosis is that a patient of this type is usually not a particularly sick individual and you may take plenty of time to observe that patient over a long period, in other words, you do not have to make that decision now. The second point I wish to speak upon is the promiscuous use of iodine therapeutically. So far as I am concerned, for routine purposes it may be legitimately employed as follows: First, for prevention of goiter, especially in goiter districts; second, in the pre-operative and post-operative management of toxic goiter. So much for iodine. I want to here stress the importance of the removal of the non-toxic adenomas, the so-called innocent lump in the thyroid gland, the lump that has been there for many years without giving any trouble, and unfortunately the doctor has often advised the patient that this lump is not of any consequence and does not need attention. Unfortunately, that is not true. These innocent lumps in a thyroid gland should be removed for the following reasons: Compression symptoms, difficulty in swallowing, and breath and voice changes. Second, they become toxic and give rise to serious symptoms, the most important of which is the impairment of the heart, the so-called thyroid cardiac. Next, they should be removed because they are the most frequent source of malignancy in the thyroid gland. You have seen thyroid-cardiacs with ascites, spitting of blood, etc., and you know that this is a very serious thing. Many of these patients have had this lump in the neck for a long time, and no one, even the doctor who is treating them, has suspected that the heart failure may be due to the thyroid, but it is a situation where the condition has developed to the degree of which I spoke. We operate for the relief of heart failure. Now as to malignancy, Dr. Brogden didn't mention it, but I think we must mention some of these things, these adenomata of which I spoke in perhaps seventy or eighty per cent are the cause of malignancy of the thyroid gland. A malignancy of the thyroid gland which can be diagnosed clinically is in all probability such that we can do nothing; in other words, we must remove adenomata

which are clinically benign. In our practice, we have been in the habit of advising the removal of these so-called innocent lumps in the thyroid gland routinely in patients who are over twenty-five years of age.

*Dr. A. Ray Wiley:* I just noticed a rather peculiar coincidence. The men who have been discussing this problem have all gone to Switzerland to study goiter and thyroid problems first-hand in a country where it is quite prevalent; that struck me as a coincidence. We still see patients coming to us with hyperthyroidism that have for many months, sometimes been treated with Lugol's solution, sometimes over a period of a year or more. Plummer first pointed out in 1920 the dangers of giving Lugol's over too long a period of time. In all bad risks and patients in a serious condition, following the operation after-treatment should be given by use of the oxygen tent immediately. There are some places in which you

can see thyroid operations every day, and in most of these places they don't wait all the time until the patient is bad, but put on the oxygen tent immediately. There is one point which I don't think has been mentioned, that we are not now relying completely on our basal metabolic rate to determine the degree of hyperthyroidism.

*Dr. Brogden:* I want to thank Dr. Long, and Dr. Wiley for discussing these points. They are important. I didn't have time to include them in my paper. The point that Dr. Long brought out on adenoma is important. The adenoma should be removed for the reasons he gave. In ninety per cent of these cases they give trouble later on. The next thing I want to mention is that hyperthyroidism is not a disease of the thyroid gland. The exact cause is unknown, but it is a powerful stimulant acting upon the thyroid gland, producing the clinical picture which we know as hyperthyroidism.

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## A Classification of the Neuroses—Its Value in Prognosis and Treatment\*

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Various classifications of the neuroses have been developed, most of which are based entirely upon description of symptomatology. It is soon discovered, however, when one attempts to designate the type of functional illness, that any classification based upon description of the predominant symptom is invariably ambiguous.

On the basis of former classification it is very rare that we find examples of pure types of neuroses. As illustrative, many cases of hysteria have distressing compulsive symptoms. A case of anxiety hysteria frequently possesses such a number of obsessional mechanisms that it is often difficult to determine which of the symp-

tom groups is sufficiently predominant in order to effect proper designation. A compulsion neurosis often is so hypochondriacal that one finds some difficulty in differentiating it from early schizophrenia. The term "psychasthenia" and "neurasthenia" are entirely descriptive and frequently border line conditions develop to the extent that the psychiatric differential diagnosis becomes mere casuistry.

Some authors speak of the neuroses in general as "minor psychoses," without attempting any further refinement in classification. The diagnosis of "functional illness" is in many cases a final one. Many physicians feel satisfied with an ultimate diagnosis of "psychoneurosis."

"Traumatic neurosis" is an entity which designates entirely different conditions to

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\*This classification has been developed largely in the Department of Neurology of the School of Medicine in the University of Oklahoma.—Coyne H. Campbell M.D.



different psychiatrists. "Anxiety neurosis" is a term that has grown into common usage and is often applied very loosely. The same may be said of "fear neurosis."

All classifications, therefore, seem to have a lack of unity. Even the very scientific approach toward classification made by the Freudian school by division of the neuroses into two large groups, namely "transference neuroses" and "narcissistic neuroses" is more or less of only academic interest, because so frequently the case can not be accurately classified into one of these large divisions until after months of careful analysis. Furthermore, the degree of transference or the degree of narcissism which is of so much importance in prognosis has not been carefully delineated by classification.

No former classification of the neuroses is of much value in prognosis other than for those few cases that classically belong to some specific type. If the symptoms of a given case are of sufficient predominance to enable a positive designation of type, then some prognostic value is obtained. For example, the prognosis in a compulsion neurosis with hypochondriacal symptoms is always bad. The prognosis of a hysteria is usually good. However, so many of the functional conditions are characterized by such a striking absence of the symptom predominance, that they do not fit into any conventionally designated type of neurosis.

The following classification is of definite value in prognosis. It is also of help in determining the preferable type of treatment to be used in the individual case. Frequently only a careful anamnesis with suggestive therapy or superficial analysis of the conflicts is all that is required. In other cases deeper analytical study and treatment may be necessary. The former can, in my opinion, be successfully treated by the average practitioner, and it is believed that a study of this classification will help him in the acquisition of treatment technique. It is also shown that some cases will not respond to any type of psychotherapy and that an attempted analysis of conflicts may do more harm than good.

The diagnosis of a neurosis is as a rule not difficult, and often during the process

of diagnosis the neurosis becomes somewhat classified.

In general, a neurosis may be defined as a manifest condition of stress, engendered in an individual who is unable to logically cope with environmental opposition. The individual, who is the victim of a neurosis, has been unable to face problems of reality to a degree that he has regressed to various emotional levels of his earlier life and at the same time is subservient to the logical functions of his adult mind. Regardless of his reasoning processes and logic, he is nevertheless a victim of this regression.

It should be stated that the conceptual meaning of this emotional state is usually entirely unconscious to the individual. The more marked the regression, the more incompatible is the emotional thinking with adult reality.

The human thinking and behaviour processes are at any given moment the culmination of extremely intricate but determinately active conditioned mechanisms. All personality structure is merely a display of infinitely complex conditioned reflexes.

In most individuals the responses to environmental stimuli possess enough similarity and constancy to produce a definite dynamic manifestation which we term "adjustment."

The responses are conditioned both by a phylogenetic and by an ontogenetic pattern. The phylogenetic pattern is ordinarily termed or spoken of as heredity. It is the fixed "rubber stamped" specie impression possessed by the individual. This pattern from the practical point of view can not be altered by the psychotherapist. The pattern of heredity is theoretically a fixed one, and it is entirely questionable and speculative as to whether or not it can be altered by the psychotherapist. Heredity, of course, influences the responses of the individual to environment and plays a great part in personality development.

The ontogenetic pattern or better known as the "influence of environment" upon the individual really constitutes the portion of the personality that is capable of alteration and readjustment by the

psychiatrist. Disorganization of this pattern plays the determining part in development of a neurosis.

It is for this reason that the following classification is made chiefly upon the nature of "precipitating factors." We are interested as psychotherapists in the immediate precipitating conflicts and in the remote conflicts as they pertain to ontogeny or to the development of the individual. Only the ontogenetic portion of the unconscious is amenable to readjustment. Efficient psychotherapy of the neuroses is in the end only the means whereby there is a satisfactory reconditioning of conditioned reflexes.

The following is an outline of the classification:

#### TYPE I CONFLICT

##### *Conscious Element—Dominant:*

Precipitating factor known to patient or easily discovered by anamnesis, and acceptable to the patient as being etiological.

##### *Symptoms:*

A—Accepted by the patient as being functional and related to precipitating factor.

B—Not accepted by the patient as being functional, but accepted as being related to the precipitating factor.

##### *Unconscious Element—Recessive:*

C—Readily discovered by interrogation, acceptable by patient and easily linked with precipitating factor. Preconscious.

D—Discovered by interrogation but not acceptable to patient until deeper layers are uncovered by special technique. Easily linked with precipitating factor.

E—Discovered by interrogation but not acceptable even after special technique has uncovered deeper layers. Sometimes difficult to link with precipitating factor.

#### TYPE II CONFLICT

##### *Conscious Element—Recessive:*

##### *Precipitating factor*

A—Known or discovered by anamnesis, but not accepted by patient as being etiological.

B—Unknown and not discovered by anamnesis.

##### *Symptoms:*

C—Accepted by patient as being functional.

D—Not accepted by patient as being functional.

##### *Unconscious Element—Dominant:*

E—Discovered only by special technique. Acceptable as etiological when discovered.

F—Discovered only by special technique and acceptable to patient with difficulty by careful analysis.

G—Discoverable by special technique, often with difficulty and when discovered highly speculative, unacceptable and unintelligible to patient.

H—Discoverable by special technique? Speculative, unacceptable and uncertain to both physician and patient.

It is noted that the neuroses are divided into two major types of conflict, designated by the Roman numerals I and II. In the type I conflict, the conscious element is dominant and the unconscious element recessive. In the type II conflict the unconscious element is dominant and the conscious element is recessive.

By conscious element is meant that portion of the individual's conflict with reality which is accompanied by awareness. By the unconscious element is meant those conflicts of the individual with environment of which he is not consciously aware, but which play an important and sometimes a major determining role in his thinking, emotions, and behaviour attitude toward reality.

Hence, in the type I conflict, the element that is producing the symptoms is some condition or event of which the patient is keenly conscious. Often his illness appears to be an almost volitional flight from this stress. The unconscious portion of the stress, which forms the determining factor or perhaps the destiny behind the creation of the environmental conflict is more or less unimportant from a practical view, because this stress is after all not so drastically incompatible with adult reality. Moderate insight with resulting



change of attitude toward the environment usually relieves these patients.

In the type II conflict, the reverse is true. There is a general incompatibility with the environment.

The element producing the symptoms is a complex conditioned mechanism, and the manner of conflict is of varying degrees of incomprehensible incompatibility with reality. For this reason the conflict is largely unconscious and yet it is also dominant. There is as a rule no one precipitating factor but rather many of them and it is for this reason that this factor is usually unknown to the patient. It is obvious, therefore, that a more careful analysis and study of the ontogenetic pattern is necessary to relieve the type II conflict.

By precipitating the factor is meant those events in the environment, recent or remote, that have instigated the incompatibility of the individual.

It will be noted that in the type I conflict, the precipitating factor is always known to the patient or easily discovered by anamnesis and acceptable to the patient as being etiological. In the type II conflict, the precipitating factor is subdivided according to cases into type A in which the factor is known or discovered by anamnesis and in type B in which the factor is unknown to the patient consciously, and not discovered by anemnesis. The recessiveness of the conscious element in type II is evidenced by the fact that even if the precipitating factor is known as in type II A, it is not accepted by the patient as being etiological.

Further differentiation of the types are made on the basis of symptoms depending upon whether or not they are accepted by the patient as being functional in their relationship, and the consciousness of the individual to the precipitating factor. Further differentiation and refinement of the different types of neuroses are made upon the nature of the unconscious element. It will be noted that in type I the unconscious element is readily discovered by interrogation and depending upon whether or not it is easily linked with the precipitating factor and acceptable by the patient determines the nature of the neurosis. In type II conflict, the unconscious

element is always dominant and discovered only by special psychiatric technique and the acceptance or non-acceptance by the conscious mind of the patient, determines the nature and severity of the neurosis.

By special psychiatric technique is meant any scientific approach and the meticulous study of the individual's personality structure, ranging from careful, regular, controlled psychiatric investigation to modified or classical psycho-analytic technique.

It will be noted from a study of the classification that twenty-two types of neuroses are possible, namely, type I A C, I A D, I A E, I B C, I B D, I B E, II A C E, II A C F, II A C G, II A C H, II A D E, II A D F, II A D G, II A D H, II B C E, II B C F, II B C G, II B C H, II B D E, II B D F, II B D G, II B D H.

Each combination produces a rather clear cut and distinct type of neurotic reaction. The type I conflict in general always gives a better prognosis than type II conflict. As outlined, the lower down the alphabetical scale in combination under either type I or type II the worse the prognosis. For example, a type I A C offers a better prognosis than I A D. A type I B C offers a worse prognosis than I A E. A type I B E is the most severe of any type I neurosis. The same holds true with reference to the designation of type II conflicts. In the type I conflict, the nature of treatment depends upon whether or not the elements D and E are present. If the element C is present in the type I conflict anamnesis and suggestive therapy is usually sufficient, providing, of course, that the precipitating factor is no longer active.

The lower the occurrence of letters in the type I classification the greater the depth of analytical work necessary. In the type II conflict more than a mere anamnesis is always necessary and only in type II A C E, can we hope to effect readjustment by simple psychotherapeutic measures. Much could be said about the different types and a great deal more could be said about the different types and a great deal more could be said about treatment of the different types under this classification but space does not permit.

The following case histories are given as illustrative of the value of this classification:

*Case No. I. Male, age twenty-four:*

Complaints: Nervousness, rapid fatigability, insomnia, palpitation of the heart, pain in the lower lumbar region, pain in the testicles. Onset about eight months ago. A careful clinical examination failed to reveal any pertinent organic findings. The anamnesis revealed that the patient had married five years ago and had no children. No special domestic conflict was apparent. He had contracted gonorrhea nine months ago for which he was treated and from which he had been pronounced entirely cured by the genito-urinary department. The patient refused to admit that he knew where he contracted the gonorrhea. Upon careful questioning he related that he had soft chancres prior to his marriage. His wife has had only one child which was born about ten months after marriage. This child lived to be only a few days old. The patient did not know the cause of the child's death but remembers that when it died it had swollen testicles. Upon closer questioning it was revealed that the patient has always felt that his case of soft chancres had something to do with the child's death. It is noted that the precipitating factor, namely, the gonorrhea is known to the patient and easily discovered by anemnesis. The patient also blames his illness upon the gonorrhea and feels that all his symptoms are due to this condition, although the disease has been completely cured.

The patient had gone through a clinic, however, and had been told that his symptoms were functional and that nothing organic could be found. He readily accepted this and also accepted the symptoms as being related to the precipitating factor.

Upon closer questioning it was also discovered that the unconscious element, namely, the belief that the death of his child had been caused by the soft chancres, was readily discovered. This was almost a preconscious condition. The patient readily accepted the fact that his belief of this bore some relation to his illness. This, therefore, is a type I A C conflict. The precipitating factor, namely, the gonorrhea, with the denial that it had

been contracted by intercourse, and the belief that his symptoms were due to this condition were the dominant aspect of his conflict. The unconscious element with reference to the death of his child was recessive.

It was explained to the patient that since he had lied about not knowing where he had contracted the gonorrhea that this was typical of his present thinking mechanism, namely, that he was lying to himself constantly. It was also pointed out to him that he was punishing himself for the death of his baby and that since his baby had died with swollen testicles, the pain in his testicles was a self punishment mechanism. After a few visits with more careful study of the mechanism of his conflicts, the patient's symptoms rapidly disappeared.

*Case No. II. Female, age thirty-three, married twelve years, one child age six years:*

Complaints: Feeling of insanity, suicidal ideas, indigestion, insomnia, crying spells, fear of death. Onset of symptoms about three months ago. Gradually becoming worse.

Symptoms developed three weeks after curretment for an incomplete abortion. Following this the patient returned home to find her brother who had returned from the East. Her brother, two years younger, was very ill with a very similar condition which the patient later gradually developed.

General clinical findings, essentially negative. Diagnosis of a functional illness made by referring physician. Precipitating factor, curretment, known to the patient and accepted as being etiological. Symptoms, however, not accepted as being functional until after several weeks of treatment, but definitely accepted as being related to the precipitating factor.

The unconscious element was readily discovered by interrogation and easily linked with the precipitating factor. The patient had an illegal abortion shortly after marriage because she felt that she was not financially able to have the child. Patient has always felt guilty about this. There are many other unconscious elements which are easily linked. Type I B D.



Patient recovered after about three months of proper psychotherapy.

*Case No. III.* Female, age thirty-four, married thirteen years, no children.

Complaints: Dryness of the throat, fullness of the throat, weakness in shoulders, pains in lumbar region, nausea, constipation, feeling of pressure in four different places in the abdomen, soreness in the abdomen, feeling of soreness and pulling in the eyes, soreness in the temples, feeling of pressure in the occipital region, stiffness in the neck, dizziness, dysmenorrhea, pain in the rectum, coldness of the spine, loss of appetite, weakness, fear of insanity, crying spells, ect. General clinical examination revealed symptoms to be functional. Onset of symptoms about eleven years ago.

In this case the precipitating factor is unknown and not discovered by anemesis.

Even after almost two years of semi-

regular visits the symptoms are not fully accepted by the patient as being functional.

When the unconscious element of the illness is studied the symbolism is so bizarre that no certain connection can be made as an explanation of the symptomatology. Type II B D H.

It should be stated that even after two years of treatment there is very little improvement other than the fact that the patient finds some solace through the transference mechanism to her physician.

It is hoped that these three case illustrations will serve to point out the proposed value of this classification.

The above classification was developed as a result of hoping to acquire a quick method of proper disposal of the functional cases that are seen daily in the outpatient department at the State University Hospital. By applying this method of study a very practical approach to the problem has been attained.

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## Principles Involved in the Surgical Diseases of the Newborn\*

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In ancient times the practice of physic and surgery was performed by one individual. Then as learning and experience unfolded the complexities of medical knowledge there came a division—the physician and the surgeon as separate ministers to the public health were originated. Times and peoples changed. The two branches of medicine changed and they grew far apart, one having very little to do with the other.

With history's cyclic repetitions there has of late been a return to a closer association of the two branches, and although we have specialists in either branch, they are keenly aware of their mutual interdependence. The capable surgeon of today

corroborates his judgment, or else seeks the counsel and advice of his medical brother; likewise, the reliable internist confronted with a problem seeks his surgical confrere's opinion.

Such close co-operation is more than fundamental in diagnosing and treating surgical diseases of the newborn. There must be a constant regard for function and structure. The subject under treatment is an independent being of only short duration. He has but recently metamorphosed from a parasite within his mother's womb, where he led an anerobic existence submerged in an aquatic medium, the temperature of which was not under his control; protected from all irritable stimuli; and he was not concerned in any way with performing the functions of respiration,

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\*Read before the Oklahoma Pediatric Society, Oklahoma City, May 13, 1935.

nutrition, or self-expression. Normally, with very little warning, he has all of this changed; his aquatic surrounding medium leaves him, he is not allowed his former freedom, but is crowded head downward into a channel where he suffers extensive surface stimuli, and rapidly changes from a parasite into a human being. As such an entity, if he wishes to continue, it becomes obligatory for him to carry on independently the vital functions then performing, and those not functioning he must establish. The performance of such a phenomena is not without manifest reaction. The careful medical observer is conscious of atelectasis, rapid pulse, cyanosis, unstable nervous system, the lack of sphincteric control, and the lusty cry. With these visible and expressionistic manifestations of adjustment, there are chemical and physiological cell adjustments being made within the tissues preparing the unit of structure to cope with the phenomena of injury. This adjustment is not immediate, but requires the fulfillment of certain definite conditions and the elapse of some time.

#### FIRST PRINCIPLE:

No surgical treatment should be attempted until the outward signs of the establishment of the vital functions indicate that the individual is making satisfactory adjustments. This to be corroborated by such laboratory tests as urinalysis, blood count, bleeding time and coagulation time to determine if the parenchymal cells are functioning normally.

#### SECOND PRINCIPLE:

Thorough, adequate protection and preparation. I mean by that, that the infant should be protected from excessive stimuli. He should lie upon a soft pad; the body temperature should not unduly vary; and above all he should be spared the unpleasant sensation of pain—that is, adequate yet safe anesthesia. To my mind local anesthesia, in the form of one-half per cent Novocain, should be first choice and where stronger anesthesia is indicated, open ether. In the manner of preparation, he should have normal fluid volume. This may be accomplished by the administration of saline or glucose subcutaneously or intravenously.

#### THIRD PRINCIPLE:

The knowledge of structure and func-

tion upon the part of the surgeon coupled with an accurate and delicate touch. He should know that the tissues of the newborn do not stand trauma well, that the period of anesthesia must be shorter than in an adult, that exposure and loss of body fluids are very prone to produce shock in these individuals, and that their ability to react to injury is limited.

#### FOURTH PRINCIPLE:

Any surgical treatment attempted should be of real and vital necessity. This would be exemplified in such conditions as a congenital atresia of the esophagus, lack of development of portions of the intestine, imperforate or non-development of an anus. The procedure selected should be of the very simplest and the most rapid in performance to accomplish the end desired, ever remembering that since the child is making adjustments gradually, the surgical procedures can likewise be done in stages.

I would suggest the following:

##### 1. *Atresia of the esophagus.*

A simple Witzel type of gastrostomy, permitting the child to be nourished. At a later date studies could be made of the esophagus and decisions as to future work made.

##### 2. *Congenital absence of portions of intestines.*

A laparotomy with an exposure and a direct examination of the kind and extent of deformity, doing a simple enterostomy above the defect, with the idea in mind of an anastomosis about the defect later.

##### 3. *Imperforate anus.*

Should there be a formed anus occluded by a membrane, this may be opened either with a finger or a pair of hemostats. Should the obstruction be dense, or should there be no well-formed anus, a colostomy should be done, and no plastic work attempted until the child is older.

No surgical procedure should be considered that does not hold forth possibilities of direct benefit. When any procedure is considered, all the possibilities for accomplishment of the end desired and possible failure, should be evaluated, keeping in mind that nature has very definite rules governing repair and function of tis-



sues and what to expect when these are not appreciated or violated. There are many surgical problems presenting themselves in the newborn, that to the casual observer should be easily corrected, but when considered in the light of the above, are known to be impossible. These are well exemplified in the lack of development of parts of the anterior abdominal wall with massive herniation and the large spina bifida.

#### FIFTH PRINCIPLE:

Proper post-operative care. The united efforts of both the internist and the surgeon should be directed toward:

1. The maintenance of proper body temperature.
2. The protection from irritable stimuli.
3. The providing of proper and adequate nourishment.
4. The restoration of the vital functions as rapidly as possible.

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#### DISCUSSION

*Dr. George H. Kimball, Oklahoma City:*  
In the care of the newborn it is now a necessity to engage the help of physicians representing the various specialties according to the conditions presented. The child is ushered into the world and even before the umbilical cord is ligated one may discover that the child has a dislocated shoulder, a broken femur, or a fractured skull. Occasionally one encounters a ruptured trachea which necessitates an emergency operation. The point is that there is seldom one man who is altogether competent to care for these various conditions.

As Dr. Burton has pointed out, certain fundamental principles must be observed before the new born is subjected to surgery. The margin of safety is small, tolerance to drugs, anesthetic agents and trauma has not been developed.

In treating atresia of the esophagus it is

sometimes found that there is an esophageal bronchial fistula below the atresia. This renders the case almost hopeless because of regurgitation of intestinal contents into the bronchial passages. Usually it is impossible to discover this until it is too late.

In cases of complete obstruction at the anus it is believed by some men that the procedure of choice is to allow the lower bowel to fill and then go in through the perineum and make an opening into the rectum. If a colostomy is done the lower bowel does not develop and while it is collapsed it is exceedingly difficult to find it by an operation through the perineum.

The plastic surgeon is most commonly called to advise about mal-formations and deformities. More frequent among these are hare-lip, cleft palate, spina bifida. All of these may be seen in a single case. None of these congenital deformities should be operated until evidence of the establishment of the vital functions is present. We owe a great deal to the pediatricians in helping to prepare a case for surgery in the newborn.

Occasionally the attending physician and parents urge us to operate cases that are not surgical. They are under the impression that it would be better to treat the case by surgery than to allow it to live. If we feel that surgery has little to offer we never advise it.

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#### "When, As and If"

The bottle-fed baby exhibits symptoms indicating partial vitamin B deficiency, described by Hoobler as (1) anorexia, (2) loss of weight, (3) spasticity of arms and legs, (4) restlessness, fretfulness, (5) pallor, low hemoglobin, etc., Dextri-Maltose with vitamin B may be used in adequate amounts without causing digestive disturbance. This ethically advertised carbohydrate supplies vitamins B and G, derived from wheat germ and brewers' yeast. Physicians who have attempted to make vitamin B additions to the infant's formula but who have been obliged to abandon this due to diarrheas or other unfortunate nutritional upsets will welcome Dextri-Maltose with vitamin B. This is a tested product with rich laboratory and clinical background and is made by Mead Johnson & Company, a house specializing in infant diet material.

Not all infants require vitamin B supplements, but when the infant needs additional vitamin B, this product supplies it together with carbohydrate. In other cases, the carbohydrate of choice is Dextri-Maltose No. 1, 2 or 3.

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See your Secretary—pay your dues.

## A Mask of Maskers—Duodenal Ulcer Versus Perforation\*

JOHN C. PERRY, M.D.

TULSA

It is a concluded and self-evident fact that interwoven within the secret fiber of every conscientious M.D. is a desire on his part to ever be the crowning head from the standpoint of medical proficiency in the esteeming eye and respect of his faithful clientele or patients who come to him in the lonely hours of the night with a fearful mind, an anguished body and a troubled soul and a wavering hand, to be led, counceled and admonished to the more pleasant abode of health and well being and free from the shackles of sickness and affliction and in the attainments of these human traits he crowns himself in the plaudits of his accomplishments.

But let this same apostle of the healing art appear at the scene of a ruptured duodenal ulcer in its secondary or terminal stage, with masked involvement of the right upper hypochondriac region, with varying symptoms that may simulate any involvement in this region. If he is not fortunate he will stand idly by, trying to console himself that on the morrow all will be well, but to his piercing regret he may be face to face, in a short span of a few hours, with a fatal spreading or ensuing peritonitis, and in his perplexity he will wish that he could, as the Arabs, fold his tent and in the quietness of the night, silently steal away. For straight is the road, narrow is the gate and sure the Utopia for which his patient is bound whose peritoneum has received a damaging or sufficient overflow of gastric contents, with an oncoming peritonitis, caused by a ruptured gastric or duodenal ulcer, with no adhesions or encapsulations to confine it to its original or primary insult or damage to the sensitive of sensitive tissue which lines the abdominal cavity and its contents, the peritoneum.

You might pride yourself in your ego and say why anyone! anytime! anywhere! should be able to diagnosticate a ruptured duodenal ulcer by the severity of the reaction to the initial insult to the peritoneum, manifested by the board-like contracture of the abdominal musculature and prostration or shock, or your inability to ease them by morphine. But let me admonish you that he who consoles himself solely upon such a diagnostic foundation or footing is sure to fall as a house built on sand, and his erectile tail feathers will droop, wilt and wax long and slowly wan like the desire of an ardent suitor to present the question in a lost cause.

The masked symptoms a ruptured peptic ulcer can take under the liver, gall bladder and diaphragm at times is a perplexing problem and puts the medical attendant in an undesired position, especially when he is on the outside looking on, instead of the inside looking in.

Moneyhan, fifteen years ago recorded forty-nine instances of duodenal perforation, nineteen of which were recorded appendicitis, and the literature is full of instances of good men who have been weighed in their balances and found wanting in the diagnosing of these conditions at the crucial moment. The late Maurice Richardson of Boston and Barnard of England, twice diagnosed a case of diaphragmatic pleurisy for perforation of a duodenal ulcer.

Dr. I. William Hinton of New York, reporting in *Surgery, Gynecology and Obstetrics*, March issue of 1931, on acute perforated ulcers of stomach and duodenum, states that during the past nineteen years or from 1911 to 1929, inclusive, there have occurred on the fourth surgical division at the Bellevue Hospital, one hundred five cases of acute perforated ulcers. Twenty-five died, eighty improved. Please get the

\*Read before the Surgical Section, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, May, 1935.



significance of that statement, improved but not cured. There seemed to be a definite increase since 1923.

One-fourth of the perforations occurred during the months of April and November. Some had no previous gastric symptoms before perforation but the majority did have.

They concluded that patients suffering from a gastric or duodenal ulcer have a chronic recurring disease which may perforate after years of medical management.

The fact that a patient has survived an operation for an acute perforation does not mean he is permanently cured, for that is not the case. These patients need constant medical supervision to obtain freedom from symptoms following operation and to diminish the chances of a second perforation.

Why do some of these ulcers respond to medical treatment and some do not, some to certain surgical treatment as simple closure and gastro-enterostomies, and some do not, especially when the ulcer bed is still there? Is it not evident that the chronicity or the length of duration of the involvement is directly proportionate to the reparative activity of the tissue involved?

Is it not evident that these ulcers of long duration do build up with a crater formation around the ulcer bed, like these large ant beds or hills out in the fields or prairies, that in youth you soon learn to stay away from?

Is it not evident that this induration is nothing more than a proliferation or infiltration of fibroblasts and endothelial cells and stroma, an example of nature's cellular activity in a persistent endeavor to span the breaks in continuity (the ulcer bed)?

It is further evident that this crater formation, induration, infiltration extends at times one or two inches back from the ulcer edge in a thick scarred mass.

Is it not a histological and pathological fact that scar tissue is poor in blood supply, therefore hindered in reparative and regenerative function, plus a low threshold against infective agencies, and continually insulted and irritated by gastric function both chemically and food?

Giving you what, gentlemen? A mask of maskers lurking in the dark, behind the curtain, with the gastric walls the setting of the scenery; and you find what? A sluggish, dormant, inactive, painful, dangerous condition which has various outlets from rupture to malignancy.

Is it not further evident that the longer this endeavor of piling up crater formation goes on with no progress that the negative factors must soon win the conflict?

Is it not a settled fact or law of cell growth, that all cell activity of the human body reaches its limit of regeneration and growth, especially if its blood supply is poor or cut off, and then degeneration or retrogression or regression takes place?

In other words, the human body is no stronger than the cells that make up the whole, and inversely proportionate to cell activity of a part of the whole.

Therefore, it would seem that these ulcer craters and beds reach a stage of inability in cell repairs or regeneration due to poor blood supply and then destructive forces are more potent than the reconstructive, and this is no doubt true or they would spontaneously heal and never rupture.

Is it any more unnatural to assume that a peptic ulcer would be any slower to heal than a chronic ulcer anywhere else in the body, if it had good blood supply to the involved part, outside of gastric activity, and it is supposed to be endowed with a resistance to withstand this?

Is it not a fact that after considering the pathology of a chronic duodenal ulcer, that it is a good example of an infarct? It surely is.

And what is an infarct? Is it not an area cut off from good blood supply, with a necrotic or liquifying necrosis in the center of the area involved? And, gentlemen, all this seems to be the exact status of a chronic duodenal ulcer.

In other words, because you open a belly, do a simple closure of a ruptured ulcer and as an added precaution ensleeve it or infold a piece of the great protectorate of the belly over it, the "omentum," is no sign you have cured your patient, for the thorn of the flesh is still there.

It is a good deal like covering over a bed of coals, but the fire is still smouldering.

These unfortunates should never get away from you until you have proven beyond a reasonable doubt, their ulcers have healed, and no one but the Almighty knows how close and wide the portals of eternity stand open for these afflicted from that constant, lurking, threatening, unseen, dynamic tendency of spontaneous rupture of these chronic gastric and duodenal ulcers, the beds of which are thin, necrotic, friable, non-elastic like a thin place in an old inner tube. All that is needed is the time, the place, the condition or sufficient amount of inflation or pressure and pop goes the blow out and maybe your patient.

What about varicose ulcers? One of the most spectacular therapeutic criteria was developed by the injection of varicose veins, and when accompanied by ulcers they will heal themselves when the veins are occluded and the beds will change from a slimy, necrotic mass to a bright red and heal at once. Why? Because you make them the recipient of an interchange of fresh blood, and not in a condition of stagnation and seepage of blood already used up by muscular activity and end products of cellular changes, for which in the past has been the plight of their unhealthy status.

Gentlemen, therein no doubt lies the secret of the failures of these chronic peptic ulcers in not healing, simply a lack of sufficient blood supply to do so. That is after they have had sufficient medical treatment and failure is still the answer or result.

In these cases I think the biblical admonishment seems applicable to this condition: "If thy right eye offends, then pluck it out." So if thy peptic ulcer offends, then pluck it out with some recognized surgical procedure of excision or resection suited to the specific case, giving you coaptation of healthy tissue plus a good blood supply with corrected chemistry and a well patient.

#### DIAGNOSIS:

The diagnosis of perforation of an ulcer of the duodenum is difficult and, in most cases, given the serious abdominal symp-

toms, you will hesitate between a visceral perforation of some sort, appendicitis, acute occlusion, hepatic colic or acute pancreatitis. The modern man will be more inclined to diagnose that of appendicitis for the simple reason that this morbid process is so common in practice.

The important thing to hold in mind and ever remember is that in the perforation of a duodenal ulcer, the earlier in the progress of the process you see the patient, the more readily you will recognize it.

And why would you say this? Because you are given a condition in a patient that has no apparent symptoms of an infectious or diseased process leading to so sudden a crisis in such an abrupt or sudden manner, and it is as a rule contradictory for tissue to react from an infectious agent in such a short space of time producing the pain and shock as that from perforation.

We say what is it that produces such severe pain in these perforations? Is it the act of the perforation, the overflow of gastric contents or the peritoneum? It is no doubt the reaction of the peritoneum to the gastric contents, for therein lies the nerve endings which receive and transmit the pain impulse.

But from thereon the major signs of perforation are veiled or masked by those of peritonitis, which undergoes its evolution with frightful celerity, making it indeed without the least equivocation a mask of maskers, holding from the surgeon or physician in its incipency the causative agent of the ensuing peritonitis which he so dearly would like to know.

You can, as a rule, notice three phases in the evolution of symptoms in the diagnosis of duodenal perforation. You may be fortunate enough to be called to see the case at its very onset, when the symptoms first appear, or some time might have elapsed, when the first phase has passed by, and it no doubt will be of short duration. The symptoms become localized in the iliac fossa, while if you are called to examine the patient in the third, or terminal phase, you will find an extensive peritonitis extending throughout the abdomen, with the patient presenting a general septic intoxication that goes with it.



There are four phases in the first stage that are important to remember in acute perforation as they overshadow all else. These are: The case history, pain, sensitivity to pressure and rigidity of the abdominal parietes.

It is very important to obtain a correct history and when you have obtained a history of the past gastric symptoms, this will materially aid you in the diagnosis of the perforation, as a majority give some dyspeptic or gastric symptom.

The atrocious pain of perforation attains its maximum then and there, and has been regarded as a pathognomonic sign.

Some diagnosticians base their diagnoses mainly upon a study of this symptom. Rigidity or spasticity of the abdominal parietes is a symptom common to all sorts of visceral perforation and no other condition within the abdomen can produce it to such an extent in so short a time, and you can prepare to open the abdomen at once upon the strength of this sign alone.

Other conditions in which similar clinical signs will be found with more or less distinctness will next be reviewed.

You will obtain the same history in gastric perforation as in the duodenal type. With sudden onset, with fearful pain seated at the upper part of the abdomen, a hard retracted abdomen with no vomiting at the beginning and little change in the pulse or temperature. But there is a differential diagnostic point: The pain develops shortly after eating in gastric ulcer, from one to three hours in duodenal perforation. Pain is relieved by taking food in duodenal perforation and greatly increased in gastric perforation.

The pain will be found to be high up in the midline in gastric perforation, while in duodenal perforation it is manifested more to the right of the midline and radiates from here to the right costal border, thorax and back of same side. In gastric perforation the pain extends to the left side of the thorax and costal border, sometimes to the left arm.

In both cases, hemorrhage may take place and is almost always constant in perforation of the stomach. The previous digestive disturbances are intense in gastric ulcer, but in duodenal ulcer, are less

obvious and do not prevent the patient from eating heartily.

The differential diagnosis of acute appendicitis may present some difficulties, but if you see a perforated duodenal ulcer shortly after the onset of symptoms, you should as a rule make it, due to its dynamic suddenness of pain plus severity of same.

There is in both a violent acute pain starting on the right side and soon involving the entire abdomen, but if you are keen in your examination and observation you will notice the pain does not begin in the same way in each.

In pain of the duodenum it occurs suddenly and reaches its summit at once, while in appendicitis it progressively gets worse.

The pain in duodenal perforation is above the umbilicus, starting in the gastro-hepatic area, while that of appendicitis begins around the umbilicus over McBurney's point.

Do not forget, however, that the anatomical situation of the appendix varies, so that the site of the painful phenomenon, when it is inflamed, varies considerably.

The rigidity or spasticity of the abdomen extends over the entire abdomen, in perforation of the duodenum, and is far more marked and severe in nature than in appendicitis, whose area of rigidity is most apt to be confined to the right iliac fossa which is the location of the appendix whose inflammatory process increases the stretching of the walls of this viscus, producing a localized area of tenderness, but a relative wide area of pain sensation—but in perforation you have a wide area of tenderness due to a wider area of involvement of the peritoneum. In other words, you might state as a golden rule of facts that when the area of tenderness is more extensive than the area complained of, the peritoneum is involved and conversely when the area complained of is wider than the area of tenderness the lesion is confined to the viscus and its covering peritoneum. The facts of which should mean a great deal in the differentiation of the respective conditions, for appendicitis is more localized and perforation more generalized. It should further

be remembered that the height of greatest pain occurs at the height of tissue reaction which is a more vicious, sudden thing in gastric or duodenal perforation.

Acute pancreatitis might be mistaken for perforation of a duodenal ulcer, due to the sudden onset of symptoms, but in it you have a tendency to collapse, which is more or less uncommon in duodenal perforation.

The pain in acute pancreatitis is in the epigastrium and the abdominal rigidity and cutaneous hyperaesthesia will be found there. The pulse is very bad in the pancreatic process, being weak, rapid and hypotensive, and this affection is more frequently found in corpulent individuals and pregnant women. Both processes demand immediate surgical interference.

It is not believed that perforation of the gall bladder can give cause for a mistaken differential diagnosis with perforated duodenal ulcer, for its symptoms are much more subdued and pain or pressure much more localized.

A ruptured ectopic gestation, acute salpingitis, ovarian cyst with twisted pedicle need not be mentioned in the diagnoses, but every woman that gives signs of peritoneal reaction, should have a thorough bimanual examination. You will note I have been referring to the early phase of perforation, with its onset of symptoms which is very short and the progress of the accident is very rapid and just as certain.

So as in all dangerous or fatal conditions, the symptomatology changes quickly. After the acute onset, as after a storm, there is an apparent lull, but you know how deceiving lulls are; you remember that apparent lull in that terrific struggle at Gettysburg, which decided the fate of the Confederate cause, when General Hunt flattered Lee with the belief that he had succeeded by drawing back his batteries over the crest of the hill for the purpose of cooling his guns.

Lee, thinking his guns and charge had prevailed, and believing his time had arrived to strike a decisive blow against the Union cause, ordered Pickett to advance with 18,000 of his choice men, and you remember the result. Hunt's batteries were quickly run back to their position, con-

summing the greatest piece of military tactics ever witnessed in the new world. What followed was the greatest slaughter of human flesh that ever bedecked the ground of any battlefield up to that time. Why? All on account of a misinterpreted lull, and so may be the apparent lull in these perforated ulcers.

But be not deceived for whatsoever a ruptured duodenal ulcer soweth that shall it also reap; soon the right iliac fossa and the pelvis will become the seat of symptomatology. For the infection continues its progress, and if the physician has not seen the case at the onset of the symptoms, or overlooked taking a careful history of peptic ulcer conditions, a mistaken diagnosis of appendicitis will be practically unavoidable. The diagnostic error may be permissible for at this stage the symptoms are similar and more so because the board-like rigidity of the abdominal walls will have subsided to some extent. At the terminal phase the entire peritoneal cavity will become involved, making the diagnosis still more difficult.

A diagnosis of general peritonitis will no doubt be made, the cause of which may never be known unless the abdomen is opened.

The diagnosticians of old gave prudence or reliance to hyperresonance or disappearance of liver dullness from the fifth intercostal space downward, known as (Jobert's sign) secured by percussion, caused by free gas in the peritoneal cavity, due to gastric or intestinal perforation.

But should be regarded as so; when associated with acute abdominal pain and distension. X-ray is of assistance in this diagnostic phenomenon in detecting a free air bubble or pocket under the diaphragm and is supposed to be more reliable taken from lateral views or exposures.

Some say Jobert's sign is positive (ninety per cent of cases) in gastric perforation and (fifty-three per cent of cases) in duodenal perforations, but it must be weighed and considered with other symptoms (associated with the specific condition).

#### TREATMENT

Gentlemen, I speak for the cause of the lost battalion due to ulcer mortality, for



into the valley of death ride these victims of fate from gastric and duodenal perforation or malignancy. (The treatment of ruptured duodenal ulcer is treatment before it ruptures). Of course, after rupture it is useless to say drain, do what your conscience dictates, breathe a worthy supplication or benediction for his speedy recovery, close and get out.

The medical and surgical mind of the present day seems to be united in a brotherly bond of union in the early treatment of these ulcers; that is, they should be subjected to a recognized medicinal and diet regime, to neutralize the acidity, and a non-irritating, acid forming diet, concomitant to the same result, for a few months.

And then if you do not get results, you are entering a stage of chronicity and find yourself like a lost ship at sea with no rudder. Every move you make may be the wrong one. On the gastric side you may be flirting with a malignancy or threatened perforation, and on the duodenal side perforation and peritonitis. As mentioned in other parts of this paper it seems there should be a definite duration of time this duodenal menace should be tolerated in its threatening hazard before surgical means are instituted. Here is where surgical minds promptly march forward with their different ideas, data and results from gastro-enterostomies, excisions and resections, all claiming better results, but all striving for the same end, which makes a confusing state of affairs—a good deal like telling a lost man how to go home. One says go this way, another some other way, the result being he is most apt to go the wrong way.

All this seeming to be a reflection rather than a beneficent criteria to surgical advancement. The less surgery done on the stomach and duodenum and the earlier it is done would naturally seem to be the best thing to do, which should give a lower death rate from rupture and malignancy.

I believe if every surgeon operating upon a duodenal ulcer could place his stomach in the place of his patient's with duodenal ulcer he would prefer to have it excised rather than have a gastro-enterostomy done and leave the ulcer bed behind;

for he is not sure that the ulcer is going to heal even if he does have a gastro-enterostomy done, and the potential threat from perforation and death from peritonitis is still there.

J. Polya on Surgery of Gastric Duodenal and Jejunal Ulcer, in International Abstract of Surgery, January, 1929, states that clinical experience as well as experimental evidence indicates that resection, even extensive resection is the operation of choice for peptic ulcer. In mild cases this procedure is no harder on the patient than a gastro-enterostomy, and further, magnifies the weight of judgment by stating that in the more severe cases, as callos ulcer, jejunal ulcer, etc., little or nothing can be expected from gastro-enterostomy.

If a patient with a duodenal ulcer reacts well to diet and medical treatment and thereafter remains well and able to work, operation is not advisable. On the other hand, when the condition responds to internal treatment only slightly or not at all, when the disturbance recurs quickly, when diet must be such as lessens the patient's capacity for work, and when there is continuous or recurring hemorrhage with the danger of developing morphinism and a roentgenologically demonstrable severe lesion, as perforation or stenosis, surgical treatment is imperative.

L. C. Lake, in International Abstract of Surgery, reporting on surgical procedures possible in the treatment of non-malignant ulceration of the stomach and duodenum considered only partial gastrectomy and gastro-enterostomy worthy of consideration in this condition and in two hundred twenty-one gastric operations, reports: partial gastrectomy, satisfactory ninety-five per cent; and in gastro-enterostomy, satisfactory only fifty-one per cent. There were more gastro-enterostomies done than gastrectomies, but received a higher per cent of satisfactory results in the gastrectomies. All the patients subjected to gastrectomies gained weight after operation and looked healthy. Fractional test meals carried out after operation showed complete achlorhydria. Fractional test meals carried out several years later showed that the achlorhydria was permanent. None showed the slightest trace of free hydrochloric acid and like-

wise showed the achlorhydria had no deleterious effect upon the the blood count.

He concluded that partial gastrectomy is the only operation which removes the cause of the ulceration in the majority of cases and can be trusted to result in permanent cure. That is, of course, ulcers that do not respond to a supervised medical treatment in a reasonable period of time.

Better results seem more evident in excision of duodenal ulcers to include the anterior half or part of pyloric muscle as you seem to get a freer back flow of bile and duodenal contents which aids in neutralizing the acid factor.

The plea and dictates of the medical mind should be that these ulcers should never reach the stage of gastric or duodenal destruction from a functional or motility phase, and thus increase a hazardous factor from surgical repair.

Following Judine's report on Treatment of Perforated Ulcers of the Stomach and Duodenum, treated in the Central Hospital for emergency surgery at Moscow during a period of four and a half years, in which they had a mortality rate of 12.7 per cent for resections and 38.8 per cent for gastro-enterostomies.

Duval, who read Judine's report before the society, suggested that the good results obtained in this series of cases should lead to the establishment of a central emergency hospital in Paris similar to those in Moscow, as the incident of perforated ulcer is about the same in both cities. He agreed with Judine that in the treatment of perforated ulcers of the stomach, gastrectomy is the method of choice.

"The objectionist to enucleation or excision of gastric or duodenal ulcers might say it interferes with the motility of the stomach. Do they forget that if they did a gastro-enterostomy and left a large ulcer bed, that this ulcer bed might be five to ten times wider than an excisional scar and that with an excisional scar with coaptation of fresh or healthy tissue, the gastric mucosa bridges over or closely coaptates the scar and that the bed of an ulcer is scar tissue and gastric mucosa does not grow over it. This being the fact it looks more reasonable, except in some instances, when the ulcer might be too

large and gastro-enterostomy mandatory, the ulcer scar would be more of a hindrance than the excisional, and especially if the excision is planned so as to bring it at a right angle to the plane of contractile action of the gastric muscles.

In other words, in an excisional scar, the break in continuity is not as wide from one severance to the other, therefore the different ranges of contractility would not be as handicapped.

Gentlemen, it is not the intent within the confines of this paper to dictate any cut and dried panacea for the treatment of gastric ulceration, but merely personal observation on cause, effect and failure of same plus accumulated surgical data on satisfactory results and mortality rate, in the management of the subject in question by men of good surgical repute, which after all is the beacon light in the advancement of our cherished profession.

Ours is a grand and glorious profession wherein you may have as many ideas as you have avenues of approach for treatment. You can give a group of physicians the accumulated data and statistics on how much quinine and when to give it for a certain strain of malaria, and some of them will say, "Why, thunderation, you don't know how to treat malaria," and they will go on and give quinine according to their own idea and perhaps get as good results. That, of course, is where the personal equation enters; that is what makes our profession appear to be more of an art than a science at times and it is likewise the criteria which makes some physicians more successful than others.

But may we all join in one harmonious union and say! May the white pinioned wings of the angels of eternity fan a balmy breeze of perception to our turbulent minds, that we should ever hold ourselves in watchful expectancy in regard to our gastric and duodenal ulcer patients and try to get them well, before we are asked to meet them face to face with a gastric malignancy, or try to ease, relieve or treat their pain-racked bodies in that most agonizing condition of perforation.

#### CLOSING

Gentlemen, these chronic dormant ulcers have a criminal tendency. They murder, they kill. You hear lawyers stand at



the bar of justice and plead their cause until their eyeballs bulge, until their retinal vessels stand out like spokes in a wagon wheel—but in this condition the tactics change; it is patient versus ulcer. You are the counselor, plead the case, present the law and with cooperative patient, pass the judgment.

And in respect to those who have departed and left foot prints upon the sands of time, from ruptured ulcers, may the staff of Aesculapius, son of Apollo, and all that is holy be elevated, beckoning the medical profession through the span of time to soon arrive from accumulated data and experience, just how long in the stage of chronicity these smouldering volcanos should continue before they are removed from threatening danger by enucleation or enterostomies or until a better method is advanced by some good plan of treatment or management.

So, always be in a recipient, admonishing, protecting attitude toward these patients as the Prince of Peace when in a fatherly way he said, "O Jerusalem, Jerusalem, how oft would I have gathered thy children together, even as a hen gathereth her chickens under her wings and ye would not."

\* \* \*

## DISCUSSION

*Dr. A. W. White:* I shall not attempt to discuss portions of the paper. Doctor Perry certainly has put in a lot of time and a lot of study and must have read a lot of books in the preparation of this paper. In the scientific part of the paper he has covered rather a wide field, including discussion of the various types of ulcers, perforation, hemorrhages, carcinoma, and the various lines of treatment. I would like to say just a few words about this question of perforation. In the first place we have, generally speaking, two types of ulcers, one referred to most commonly as the penetrating type, or the chronic. These ulcers always occur near the lesser curvature of the stomach, at the site of the greatest blood supply of the stomach. I can't quite agree that the ulcers occur at the point of most limited supply. That does not occur in the septic type of ulcer. It may occur in the masked type. There are two types of ulcers, the

chronic perforating and the acute. The chronic is a slow perforation, a leakage that comes on gradually, and the emptying is nearly always behind the stomach in the so-called chronic type. At least ninety or ninety-five per cent occur posterior to the stomach in the chronic type, and in the acute type ninety or ninety-five per cent occur anterior to the stomach. The contents are poured out rather rapidly in the acute type, setting up a violent irritation in the peritoneum, and as the contents spread there is pressure upon the diaphragm which gives rise to the symptoms Dr. Perry referred to, that in the acute case the pain is most often on the right side. It is characteristic in all ulcers located in the duodenum that the point of greatest tenderness is just to the left of the midline, the center of pain is just to the left of the midline and often radiates to the back and posteriorly to the shoulder or down the left arm. Under the x-ray the collection of gas gives practically the same phase as that of subphrenic abscess, so that subphrenic abscess is one of the first things in differential diagnosis. Only about seven per cent of ulcers rupture. The chronic type does not rupture as readily as the acute type, unless the chronic type has become dormant and been relighted by a change in the renewed activity or over-activity of the acid-bearing glands, so as to set up a penetrating type of ulcer in the chronic crater of the callous type. The time element has always been a question of considerable discussion. It is a noteworthy thing that at least sixty per cent of these cases occur early in the morning; five o'clock probably the most often, or when the stomach is or should be practically empty. They rarely occur when the stomach is full. Mount Sinai, in their research department some two or three years ago, did considerable experimental work on this question of intra-gastric pressure, and it was determined that when the stomach is full there is an increased pressure, and that by the strain in exertion, lifting, pulling, etc., the abdominal muscles are so increased in tensiety that the stomach is better protected, and rupture practically never occurs under that sort of situation. A blow in the stomach may aggravate it, although American textbooks always have said that a blow on the stom-

ach cannot produce a rupture. The European textbooks have always taken the opposite view. In the past two or three years, particularly in Oklahoma and in this region, Oklahoma City, there have occurred more ruptures of the stomach while the patient was at work from a so-called silent ulcer than have been reported in our literature or have come under our observation formerly. I think it is a matter of coincidence. An important factor is that they were silent ulcers. The work or the strain would not produce the rupture except in the case of a blow. Lifting or pulling probably did not produce it. It was probably a coincidence; an area where there has been a loss of continuity of the tissue finally breaks down and of course the contents are expelled into the abdomen. We sometimes find that the patient has had no previous ulcer symptoms and has not sought relief. It does seem that in different localities, in different seasons of the year, and in different years, the symptomology associated with the activity of an ulcer is much more pronounced than in other years. The recognition of this particular thing is made much easier if there is a history, and if one will be careful and pay some attention to details in obtaining the history, quizzing the patient carefully, not asking him casual questions. The taking of the history is most important. If there is any suggestion of gastric distress that has been occurring periodically over a period of years before, occurring principally in the Spring or Fall, one would suspect an ulcer. If the pain has come on suddenly, there is board-like rigidity, Morphine does not relieve the pain, there is evidence of shock, at first no increase in pulse and then a rather rapid increase in pulse rate, with or without rise of temperature, that patient should have the abdomen opened on suspicion of acute ruptured viscus. If the patient is operated within twelve hours the outlook is almost one hundred per cent if properly done. The less done in the operation the better. The less surgery done, the better the chance of your patient. If you wait for days perhaps, the seepage in the chronic type may produce a low grade perigastric abscess.

*Dr. Risser:* I just want to say a few words as to one or two personal experi-

ences in answer to what Dr. White said about the time of rupture of an ulcer. A few years ago a man came to me one morning and wanted an x-ray of the stomach. He gave a history of having had some gastric disturbance over a number of years. About nine or ten o'clock he was given a barium meal. We made the first series of plates and allowed him to go home. About twelve-thirty his wife called me in great haste, and over and beyond her voice I could hear this man groaning and complaining. I went to his home and found him rolling and tumbling on the floor, in a cold sweat, pale, and with drawn features, the picture of a perforated viscus. We took him to the hospital and opened his abdomen and found that the barium had been the last straw. We removed the barium from his abdomen, closed up, and he got well. The second case, a young healthy farmer, had his breakfast one morning and soon after was taken with violent pain. It continued all day. I was not called for twenty-four hours, but I had them bring him to the hospital, and found very much the same picture. Evidently he had had a perforated ulcer for twenty-four hours. Even when we operated on him, that stomach was still pumping out gastric contents. To say that he had a stormy convalescence is putting it mildly, but he is back on the job now. These are just simply experiences I have had. We will probably be as well off if we do not always look for textbook symptoms. We need, as has been emphasized by Dr. White and the author of this paper, to go further back in the history than just the immediate attack.

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#### Notice of Examination by The American Board of Otolaryngology

An examination was held in Cincinnati, Ohio, September 14, 1935. Fifty-seven candidates were examined, out of which number, forty-two were certified and fifteen conditioned.

The Board will hold an examination in Kansas City, Missouri, May 9, 1936, during the meeting of the American Medical Association, and in New York City, October, 1936, just prior to the meeting of the American Academy of Ophthalmology and Otolaryngology. Exact date has not been set as yet. Prospective applicants for certificate should address the Secretary, Dr. W. P. Wherry, 1500 Medical Arts Building, Omaha, Nebraska, for application blanks.

H. P. Mosher, M.D.  
President.

W. P. Wherry, M.D.  
Secretary-Treasurer.



## Vertigo From the Otological Standpoint\*

THEODORE G. WAILS, M.D.  
OKLAHOMA CITY

I shall give a brief resume of some of our observations on the physiology of the vestibular apparatus. Details of anatomy will be kept at a minimum.

The seventh or static-kinetic sense has as its end organ, the semi-circular canals and the saccule and utricle of the inner ear. The static-kinetic sense is briefly the ability to compute one's position in space with reference to known stable objects, such as earth, horizon, north star, etc.

The ability to maintain any chosen position, whether it be perpendicular to the earth or parallel to it, depends on the proper functioning of three senses, i. e., sight, muscle sense, and static-kinetic sense.

When one is turned rapidly from left to right, with head forward thirty degrees, the endolymph in the horizontal semi-circular canals is set in motion, that in the right moves away from the ampulla washing the hair cells away from the crista, while in the left horizontal canal, the hair cells are washed upon the crista, producing a stimulation which we are able subjectively to interpret as a change in position. One must, therefore, remember that in using a Barany chair, the resulting vertigo and nystagmus phenomena are produced about sixty-six per cent by the ear from which one whirls and only thirty-three per cent by the ear toward which one whirls. In caloric douching, all the phenomena are produced by the stimulated ear. This incidently is the main reason why the caloric tests have gradually supplanted the Barany chair in testing the vestibular function.

As we turn to the right, our eyes will at first lag, then catch up and when we stop will go a little further and return. When this turn is slow enough that we can cerebrate with it and control the movement of our eyes, our static-kinetic

sense is functioning properly and our position is known. When we whirl so fast, that we can not keep orientated, then we have subjective vertigo and our eyes continue to go past the objects and we have objective nystagmus.

The converse is also true, we may start with nystagmus and get vertigo and its contemporary pallor, sweat and nausea. This is the cause of car sickness. If you will look at the eyes of a person looking out of the window of a rapidly moving train, you will see a beautiful horizontal nystagmus. This is usually within the bounds of normal cerebation, but occasionally gets beyond this and ends with dizziness, nausea, pallor and sweat.

Continued stimulation at intervals finally dulls the sensitivity of these end organs and stops the vertigo. This explains why a pilot in his first spin is unable to perform proper maneuvers to neutralize the spin. If he spins his ship many times, he dulls his sensitivity or as he says, "gets used to it." Then he has perfect orientation and knows his exact position at all times.

As had been said before, however, he must see some known stable point of reference as the earth or horizon. One can not spin in a fog and come out properly except by instruments. Indeed one can not ever tell for sure he is spinning except by his instruments. Many good pilots have been lost because they believed their ears instead of their instruments when there was no visibility.

Again by vertigo, we mean dizziness or giddiness which is momentary or permanent disorientation. For the moment one is not able to tell certainly his position in space, it is not associated with nausea except when there is visibility. If there are no objects of known position visible, one may feel perfectly normal and yet not be perpendicular to the earth as he thinks. The ability to know one's position in space

\*Read before St. Anthony Hospital Staff, 1935.

is, therefore, not inherent in the canals, but is only computed when we have some object of known position to refer to. A pilot may feel confident that he is flying on even keel and come out of a fog banked violently or doing a vertical turn.

Vertigo is usually associated with falling because when a point of known position as the earth begins apparently to turn up on edge and make violent gyrations our system of computing our position is suddenly impaired and we fall or stagger because we do not exert the proper use of our muscle sense with which we ordinarily maintain our position. So much for normal functioning.

Abnormal functioning is due to excitation or depression of the vestibular apparatus chiefly by four sources: (1) intoxication, (2) circulation disturbances, and (3) reflex stimulation and (4) trauma.

Intoxications are divided into the mild types and severe types.

Mild intoxications or actual inflammation may result from absorption from a sluggish bowel and I believe this is actual absorption rather than reflex. It is called biliousness; general malaise is also closely associated. Mild impairments also may result from alcohol and tobacco. The first tobacco sickness with its dizziness, pallor, sweat and nausea, is due to abnormal functioning of the vestibular apparatus from mild poisoning. When the alcoholic staggers cause falls, it is not because his muscles are so weak they will not support him, but because he has an alcoholic intoxication of either the end organs, pathway or cortical representation of the vestibular apparatus and can not compute his position. He feels that he is standing erect and the ground is moving up to him, instead of him moving toward the ground.

Focal infection from the usual sources may cause mild but increasing symptoms. Acute toxemias from influenza may cause a labyrinthitis with violent symptoms which, however, usually clear up in a few days, as the amount of absorption decreases. At first the inflammation may be so localized as to not affect the hearing, but generally it spreads to the rest of the end organ and the hearing becomes impaired, if it does not clear up soon.

In mild increasing types such as from focal infection there is an actual neuritis and always proportionate impairment of both cochlea and vestibule. When there is much disproportion between vertigo, nystagmus, and hearing the lesion is along one of the pathways to the brain after the eighth nerve has entered the pons.

More violent intoxications such as produced by syphilis, mumps, epidemic meningitis, and tuberculosis may cause a neuritis of the eighth nerve that will completely destroy both functions.

In traumatic cases since the fibers of both divisions are so closely associated in the main nerve trunk, it is impossible to injure the trunk by trauma in such a way that both functions will not be proportionately impaired. Also since the nerve completely and tightly fills the Fallopian canal, it is impossible to fracture the bone across this nerve and not break the nerve. Therefore, when the mastoid is fractured, we either get no loss or complete loss, as far as the nerve is concerned, depending on whether the Fallopian canal is fractured across. We may get a conduction loss due to blood or rupture of the middle ear structures, or drum. However, these usually clear up with time and luck on keeping out infection.

In industrial cases with hearing losses from the unusual stimulation by the reverberation of wild oil wells, when other malingering tests fail, a fairly accurate measurement of the defect of hearing can be estimated by running a quantitative caloric test on such an ear. The quantity as well as the quality of the objective signs of nystagmus, past pointing and falling can be measured and compared with the normal.

Dysfunction due to circulation causes such as fainting, embolism, thrombosis, oedema, ischemia, and hemorrhage may produce vertigo. The treatment, of course, is to find the high blood pressure, anemia, nephritis or general disease causing the symptoms. Meniere's syndrome is a common example. The symptoms are all violent because of their sudden onset. When the patient has had time to get his cerebration dulled to this unusual condition, he ceases to be dizzy or like the aviator, gets used to it and must depend upon his other ear thereafter.



Vertigo or nystagmus coming on in the presence of ear infection is always a serious symptom. It means either stimulation or miasion of the labyrinth or its pathway..

There may be at first only irritation of a canal due to erosion of the bone with stimulation of the membranous labyrinth, or there may be actual invasion of the canal by living organisms. In the first case a mastoidectomy should remove the irritant; in the second case more must be done.

Labyrinthitis may exist as serrous or purulent and may be circumscribed or diffuse. These can usually be differentiated by comparing the function of the canals with that of the cochlea. Circumscribed serrous labyrinthitis is usually not hard to handle, whereas diffuse purulent is very apt to continue as a purulent diffuse meningitis.

We have recently seen a case of streptococcus mastoiditis in a boy of seven years, who was brought in because of fever, twitching of his eyes, dizziness, and vomiting. The infection was about ten days old. There also was pain in his eyes and a paralysed left sixth. There was some evidence of increased intracranial pressure, not diffuse purulent meningitis. Diagnosis of streptococcic mastoiditis with irritation of the labyrinth, and infection of posterior cells of petrous pyramid was diagnosed and found. After three or four days of stormy reactions, temperature dropped, irritation signs of meningitis disappeared, nystagmus and vertigo disappeared, and patient is recovering with no sign of abscess. I believe there was a serrous labyrinthitis and serrous circumscribed meningitis present in the angle adjacent to the posterior cells of the petrous pyramid. Removing the cells and stripping the dura away from the bone broke off the the vena-venosa and freed the dura from the temporal bone. The hearing continued good in the operated ear, showing the cochlea was not invaded with purulent material.

Occasionally one sees with mastoiditis or tumor, a conjugate deviation of the eyes to one side or the other. Both eyes pulling to the right or left. This is not to be confused with a gradenigo syndrome. It

is not due to paralysis of the sixth since the opposite eye has the third affected. This is due to intereference with the cerebral component of the nystagmus. The ear pull of the opposite ear pulling both eyes to one side and the afferent impulses above the nuclii to the cortex being interfered with do not let the eyes snap back. This usually means pressure or destruction in the mid-brain at the upper part of the cerebellum, or at least something nearer the cerebral cortex than the cerebellar or cranial nerve nuclii, usually from retention of fluid in the cerebello-pontine angle.

Therefore, vertigo must always be considered as an ear symptom, though the stimulus may come from a distant point.

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Do not make your Secretary do all the work—  
See him. All memberships expire December 31st.

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#### The Use of Dilaudid in Treating Patients With Cancer

"There is a definite place for the use of Dilaudid in the armamentarium available for the treatment of pain in cancer patients, but it must be used with the same caution as the other opiates," according to Nathanson and Daland, of the Pondville Hospital (New Eng. J. of Med. 213:741, Oct. 17, 1935). Dilaudid was administered in various dosages, forms, and combinations to one hundred fifteen patients with malignant disease, and to fifteen surgical cases. It was found, by these observers to be an efficient analgesic in doses approximately one-fifth those of morphine, acting about twice as fast as the other opiates with a duration of action and degree of relief comparing favorably with that of morphine. In therapeutic doses, it was not usually hypnotic, and in many instances required the addition of barbiturate to obtain sleep. "This weaker hypnotic effect is of definite benefit to the ambulatory patient, as it gives him the opportunity to be up and around and aware of his surroundings." A combination of Dilaudid in the small dose of grains 1/48 with aspirin grains ten proved to be an efficient analgesic for patients with moderate pain. The effect on the gastro-intestinal tract as regards side-reactions was less than with morphine. It is an efficient reliever of cough. When other opiates had been given for several weeks before Dilaudid, it was not as efficient in equivalent doses. Tolerance, although it is believed to develop, was not so marked or rapid as with morphine. Itching and respiratory depression seemed more prominent, but in general it was less likely to produce undesirable side-effects than morphine. Small doses given at frequent intervals were found superior to large doses given at less frequent intervals, although the total twenty-four hour amount may have been approximately the same.

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See your Secretary—pay your dues.

# THE JOURNAL

OF THE

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McAlester, Oklahoma

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Failure to receive The Journal should call for immediate notification of the editor, 203 Ainsworth Building, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

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### EDITORIAL

#### WHY PAY DUES?

At this time when the payment of dues is called for by the Secretaries of County Medical Societies it might be a good plan to consider the advisability of making the investment. Let's leave out of our consideration all sentiment and look at this matter from a cold-blooded business standpoint. We will admit that each county organization needs every eligible physician and now let's attempt to prove that each physician needs the county organization.

The County Medical Society furnishes the only route for membership in state, national and special scientific societies, and this is as it should be, for the home doctors know best as to a man's qualities, both professional and ethical and whether or not he is proper material for member-

ship in professional organizations. When he is accepted by his neighbors as a member of his own County Medical Society it is the very best indication that he will make a good member in any medical society to which he may apply for membership.

The County Medical Society furnishes practically the only opportunity for social contact with other physicians as such. This phase of county medical society work is sometimes neglected and we are sure that more intimate and continued social contact among the doctors would do away with much of the strife and antagonism that exists in certain localities.

County Medical Societies furnish the only organized professional contact that can exist between the physicians of a locality. We know of physicians that do not attend their county society meetings and if they are of the opinion that they cannot learn anything from their neighbor colleagues they are mistaken. No matter how smart the doctor may be he can be assured that he will learn something if he will attend his County Medical Society meetings. Even though he may be smarter than all the other members he still owes it to the rest to attend the meetings and give the members of his community the benefit of his knowledge.

When he joins the County Medical Society he also joins the State and American Medical Association and therefore becomes a part of organized medicine not only in the county but in the state and nation. As a result of membership in your State Medical Association you receive the benefit of insurance against malpractice to the amount of one hundred dollars for attorney fees, provided this protection is not carried in an indemnity company. Your own State Association has helped many since the existence of this insurance fund and each year we are called upon to give relief to some doctor who has either forgotten or could not afford indemnity insurance. A Committee of your own Council acts upon these cases and it is a very rare occurrence for them to deny this protection to any applicant.

Much work has been done by the State Association in forwarding Post Graduate Medical Teaching. For several years we were associated with the Extension De-



partment of the University of Oklahoma in carrying on this work and when the University withdrew from the field and left us with a job on our hands we continued this work and at this time there is being organized a faculty for the presentation of courses in the southwestern part of the State which will be entirely under the direction of the State Medical Association and steps have been taken to bring about a re-establishment of this work in the University and we are hopeful that we will be successful.

Through the State Association your Committee on Legislation has kept in touch with legislative matters during the sessions of the House and Senate and while they may not have accomplished all we could wish they have been instrumental in securing the passage of some important legislation and through their influence have been able to defeat some measures that would have been detrimental to organized medicine in the State.

Through the County and State Association the Journal is published and each month contains five or six professional articles that are of high standard, also abstracts from leading medical publications, both foreign and domestic, prepared by some of the best authorities in our State, thus bringing to you some of the richest professional material.

Now I will mention the Annual Meeting of the State Association, where you meet your friends, have a good time and hear some of the best international authorities presenting subjects that are timely and interesting. Both the technical and scientific exhibits are well worth while and each man who attends this meeting is decidedly benefitted and well repaid for the time and expense.

All of these things and many more are brought about through membership in your County Medical Society and we hope that you will feel that your investment is a good one and that during the month of December you will see your County Secretary and continue to affiliate yourself with your County, State and National organization.

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## SOUTHERN MEDICAL ASSOCIATION

In a few days the Southern Medical

Association will meet at St. Louis, the dates being November 19th to 20th, inclusive. You probably noticed some of the features of this meeting in the half-page presentment which appeared in the October issue of the Journal. This is the second largest association of the members of organized medicine in the United States and some of Oklahoma's leading physicians have been honored with office in this Association.

This is the year when it will be very handy for the doctors of Oklahoma to attend this meeting and the Southern Medical Association expects the Oklahoma physicians to furnish their per cent of attendance.

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### *Editorial Notes—Personal and General*

DR. I. V. HARDY, Medford, is doing post graduate work at the Mayo Clinic, Rochester, Minn.

DR. W. L. STEPHENSON, formerly of Alva, announces the opening of his office at Cheyenne.

DR. R. W. STONER, Wetumka, has been appointed city health physician of Wetumka.

DR. JOHN D. CAMPBELL, formerly of Duncan, announces the opening of his office at Fairview.

DR. W. E. LAMERTON, Enid, was injured while trying to wrest a pistol from one of his former patients who had threatened Dr. Lamerton because of a civil suit over a hospital bill.

DR. EDWARD D. GREENBERGER, of the Mankato Clinic, Mankato, Minn., and New York, will take over the offices of the late Dr. J. C. Johnston, McAlester, November 1st. Dr. Greenberger will specialize in radiology and dermatology.

DR. R. M. SHEPARD, Tulsa, was elected president of the Oklahoma Tuberculosis Society at its annual meeting held in Oklahoma City in October. DR. CHAS. M. PEARCE, Oklahoma City, was named vice-president. DR. L. J. MOORMAN, Oklahoma City, was re-elected president emeritus.

OKMULGEE Clinic has been dissolved and hereafter the building it occupied will be operated as the Ming-Vernon Clinic, with Dr. C. M. Ming and Dr. W. C. Vernon in charge.

The following is quoted from the Tulsa World under date of October 1st:

"SHEPARD ONCE 'SHEPARD'"

Dr. R. M. Shepard is now president of the Tulsa County Medical Society, but what few of his friends and associates in the profession know is that at one period in his life, when he was younger, Dr. Shepard was for three years an evangelist, going from parish to parish in the south and playing the organ while he led the congregation in singing the old hymns. The doctor is still capable of coaxing those hymns from a piano."

Do not make your Secretary do all the work—See him. All memberships expire December 31st.

## News of the County Medical Societies

WOODWARD County Medical Society met Tuesday evening, October 8th, starting with a dinner at the Baker Hotel, after which the ladies were entertained at the Woodward Theater, and the doctors repaired to the Woodward General Hospital where under the management of Mrs. Silverthorn, Superintendent, the large reception room had been turned into a miniature medical laboratory. This was successfully used by Dr. Fred Clark of El Reno, the guest of honor, who gave a talk to the physicians upon Gastric Enterology, and demonstrated the methods now in use in making chemical and x-ray diagnosis of these troubles.

There were twenty-seven physicians with their wives present.

Next meeting will be at Supply, December tenth.

OKMULGEE-OKFUSKEE County Medical Society had as its guests at a dinner-meeting in Okmulgee, September 23, Dr. Henry Turner and Dr. John E. Heatley of Oklahoma City. Dr. Turner spoke on "Present Day Status of Endocrinology," and Dr. Heatley on "X-ray Diagnosis of Anomalies of the Spine."

OSAGE County Medical Society held its regular meeting at Pawhuska on October 7. Dr. Anson Clark of Oklahoma City presented a paper on "Fever Therapy: Its Possibilities and Limitations," and Dr. Henry Turner of Oklahoma City spoke on "The Recent Advances in Endocrinology—with Special Reference to the Sex Hormones." Dr. Wyrick of the Government Clinic discussed his work among the Indians.

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## News Notes of Woman's Auxiliary

The Woman's Auxiliary to the Southern Medical Association will meet in St. Louis, Missouri, November 20 and 21. All women attending the Southern Medical Association meeting are invited to the Auxiliary meetings.

Members and eligible members of County Auxiliaries are cordially invited to attend the luncheon meeting Wednesday, November 20, at 12:30 p. m., and the Annual Meeting, November 21, at 9:30 a. m. The business sessions are to be conducted on a schedule, allowing time for social arrangements. For the development of the Auxiliary, it is important for members and eligible women to be present, because the foundation of an organization rests on its membership and future leadership comes from it.

All Auxiliaries please send the names of their officers to the State Press and Publicity Chairman.

The National Auxiliary President is stressing "A well informed member is a loyal one." Her aim is to give more information to all its membership.

The following is a list of the officers and committees of the State:

### OFFICERS

Mrs. Chas. R. Rayburn, President-Elect, Norman.  
Mrs. J. C. Perry, Vice-President, 2330 E. 11, Tulsa.  
Mrs. F. Maxey Cooper, Recording Secretary, 322 N. E. 16, Oklahoma City.

Mrs. R. L. Murdoch, Treasurer, 424 N. E. 16, Oklahoma City.

Mrs. Fenton Sanger, Historian, 1909 N. W. 22, Oklahoma City  
Mrs. Tazwell D. Roland, Parliamentarian, 1401 N. Broadway, Shawnee.

### COMMITTEES

Mrs. J. M. Byrum, Student Loan, 1703 N. Broadway, Shawnee.

Mrs. C. R. Rountree, Organization, 2038 N. W. 19, Oklahoma City.

Mrs. J. S. Rollins, Public Relations, Prague.

Mrs. Elias Margo, Press and Publicity, 2739 N. W. 18, Oklahoma City.

Mrs. J. J. Gable, Hygeia, Norman.

Mrs. Nesbitt L. Miller, Printing, 974 East Drive, Oklahoma City.

An Auxiliary to the Garfield County Medical Society was organized in October when the wives of the members met at the Oxford hotel, elected officers and studied plans for the Auxiliary.

A group from Oklahoma City including Mrs. C. M. Pounders, President of the State Auxiliary, Mrs. C. R. Rountree, Mrs. Earl D. McBride, Mrs. Chas. P. Bondurant and Mrs. F. Maxey Cooper, assisted in the organization and explained the purposes.

Mrs. Fred A. Hudson was elected president; Mrs. R. C. Baker, vice-president; Mrs. Bruce R. Hinson, secretary; Mrs. D. D. Roberts, treasurer; Mrs. Glenn Francisco and Mrs. Julian Field were appointed members of a committee to select a project for the auxiliary, to be reported at the next meeting. Meetings are to be held monthly.

### Diagnostic Gastroscoy, With Especial Reference To Flexible Gastroscope

Of two thousand gastric examinations, Rudolph Schindler, Chicago (Journal A. M. A., August 3, 1935), carried out approximately one-third of them with the flexible gastroscope. He found that this instrument has made it possible to visualize the interior of the stomach with safety and with relatively little discomfort to the patient. The flexible gastroscope affords an additional method for the direct morphologic diagnosis of gastric disease. Gastroscopy not only supplements the roentgen examination in the direct diagnosis of gastric ulcer and gastric neoplasm, but it aids greatly in their differential diagnosis. It also furnishes direct evidence of the progress of the benign lesions and of the degree of involvement in cases of neoplasm. Gastroscopy reveals gastritis and other changes in the gastric mucous membrane not discernable by other procedures.

### New Type of Education

Many universities and private institutions now offer for adult students certain courses in which the real professors are children two, three and four years of age. This new type of school may be called a nursery school, a child institute, a child research center or a preschool laboratory. It makes little difference what it is called. All such schools exist for the purpose of giving the elders an education.

In her article "Pupil—or Professor?" in the September Hygeia, Elizabeth M. Stalnaker explains how a group of nursery school children showed by their natural responses the right and wrong ways of training children and how they worked out in truly stimulating and enlightening manner various problems of community life.

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### Muskogee Academy of Medicine

The following program is announced for the fourth meeting of the Muskogee Academy of Medicine to be held at Muskogee, Oklahoma, December 4th, 1935:

Clinics: Oklahoma Baptist Hospital, Muskogee.

1. Dermatology and Syphilology—C. C. Dennie, Kansas City, 9:00 to 10:00 a. m.

2. Internal Medicine—P. T. Bohan, Kansas City, 10:00 to 11:00 a. m.

3. Gynecology—John C. Burch, Nashville, Tenn. 11:00 to 12:00 a. m.

Luncheon—Severs Hotel, 12:15 to 2:15 p. m., Dr. C. E. White presiding

Address—Medicine in South America, C. C. Dennie.

Scientific Session: Severs Hotel, 2:30 to 5:30 p. m. Dr. A. N. Earnest presiding.

1. Differential Diagnosis of Uterine Bleeding—John C. Burch. Introduced by Dr. W. C. Vernon, Okmulgee, Oklahoma.

2. Subject unannounced—P. T. Bohan. Introduced by Dr. J. S. Allison, Tahlequah, Oklahoma.

3. Subject unannounced—C. C. Dennie. Introduced by Dr. M. O. Nelson, Tulsa, Oklahoma.

Dinner—Severs Hotel, 6:00 to 7:30 p. m. Dr. C. V. Rice presiding.

1. Address, 20 minutes—Dr. John C. Burch.

2. Address, 20 minutes—Dr. P. T. Bohan.

Scientific Session: Severs Hotel, 8:00 to 11:00 p. m.

1. Subject unannounced—C. C. Dennie. Introduced by Dr. Goldstein, Fort Smith, Arkansas.

2. "The Nervous Woman"—Dr. P. T. Bohan. Introduced by Dr. W. A. Tolleson, Eufaula, Oklahoma.

3. Practical Applications of Gynecology and Endocrinology—John C. Burch. Introduced by Dr. E. A. Aisenstadt, Picher, Oklahoma.

Guest Speakers:

1. Dr. P. T. Bohan, Professor of Clinical Medicine, Kansas University.

2. Charles C. Dennie, Associate Professor Dermatology, Kansas University.

3. John C. Burch, Associate Professor Clinical Gynecology, University of Tennessee.

### Systemic Thrush in Childhood

During twenty-five years of pediatric practice Frederic W. Schlutz, Chicago (Journal A. M. A., August 31, 1935), has seen five patients with generalized systemic thrush, all showing very unusual symptoms. Four of these cases are reported here, the fifth case was the one reported by Dr. Christison. The patient had been under the author's care for about one year. The interesting feature of the cases reported consists in the extraordinary symptoms presented. The dwarfing effect of the disease presented in two of the cases and the generalized alopecia noted in three of them have to his knowledge not been reported in the literature. The fairly rapid form of sepsis observed in the case of the infant also seems to be exceedingly rare. All four of the cases illustrate the formidable nature of this disorder when it becomes a generalized infection, and the remarkable ineffectiveness of any form of treatment.

### Chocolate Powders and Syrups Heighten Flavor Appeal of Milk

Chocolate flavored powders and syrups may be combined with milk to make nutritious drinks which appeal to young and old. They are useful between meals, at lunch or at bedtime. They are suitable as a part of the meal or as a source of

additional nourishment at other hours of the day. Invalids, convalescents and elderly persons, as well as those who are vigorous and strong, enjoy such beverages. Mothers find them useful to supply extra calories to active children.

The various brands of chocolate flavored powders and syrups accepted by the American Medical Association's Committee on Foods are discussed by Doris W. McCray in the September Hygeia. In her article she tells of the value of such foods in the diet and describes the legitimate claims which may be made for them.

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### DOCTOR JAMES THOMAS MOON

Dr. J. T. Moon, 49-year-old Miami physician, died at his home Sunday, October 20th, following a short illness. Dr. Moon had practiced medicine in Miami for eight years, coming there from Wagoner.

He was a member of the Ottawa County Medical Society and the First Baptist Church. Surviving are his wife and one daughter. Burial was in the G. A. R. cemetery.

### DOCTOR HENRY DEWITT SHANKLE

Dr. H. D. Shankle, former member of the Pittsburg County Medical Society, died at his home in Washington Court House, Ohio, September 26, 1935.

He served during the World War, and was a member of the Naval Reserve Corps.

The Doctor, with his wife and daughter, Helen Louise, located in Hartshorne, Oklahoma, late in 1918, and lived there until the year 1928, when he entered government service with the Veterans Administration Facility. Before going to Ohio the family lived at Fort Harrison, Montana.

### DOCTOR ROY M. SWEENEY

Dr. R. M. Sweeney, 52-year-old Sapulpa physician, died October 18th, following a long illness.

He was born in Kansas in 1883 and graduated from the St. Louis Medical School in 1907. Upon graduation he came to Tulsa but shortly located at Kellyville where he began the practice of medicine. In 1909 he was married to Miss Annette Busey of Lockwood, Mo., and they then moved to Sapulpa where he continued the practice of medicine until his death.

Dr. Sweeney was a member of the First Christian Church, a 32° Mason, a Knights Templar, an Elk, a Shriner and member of the Scottish Rite Consistory at McAlester. He was also president of Creek County Medical Society for three years. He was a member of the Rotary club and a past president of that organization.

He is survived by his wife and one daughter, his mother and one brother.

# ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
LeRoy Long Clinic  
714 Medical Arts Building, Oklahoma City

### Carcinoma of the Thyroid Gland Occuring in a Young Woman. Proceedings of the Staff Meetings of the Mayo Clinic. C. W. Mayo and W. L. Butsch. August 21, 1935.

The most important questions that arise in connection with malignancy of the thyroid gland are as to how and when it occurs. For practical purposes malignancy of the thyroid gland may be assumed to be carcinoma, because Pemberton found but four instances of sarcoma in a series of forty thousand pathologic examinations of specimens of the thyroid gland. There is great unanimity of opinion about how carcinoma of the thyroid occurs. Pemberton has reported that eighty to ninety per cent, Graham, ninety per cent, Clute, ninety per cent; Smith, Pool and Olcott, 92.6 per cent and Collier 98.8 per cent of carcinomas of thyroid glands originate in pre-existing adenomas. On the other hand, carcinoma rarely developed in a diffuse hyperplastic gland of exophthalmic goiter. Pemberton observed it only once in a series of two hundred seventy-six cases of carcinoma of the thyroid and Collier but once in ninety cases. Carcinoma develops in the thyroid gland most frequently in the fifth, sixth and seventh decades of life as it does elsewhere in the body. But reports such as those of Potter and Morris, who found carcinoma developing in nodular goiter in five persons under the age of twenty years, and of Lee who found it in a child eight years old, suggest that one must be continually on the lookout for it.

In considering the clinical recognition of these tumors, the opinion of Wilson in 1921 that "correct early diagnosis of malignant tumors of the thyroid are made probably less frequently than of malignant tumors involving any other organ of the body," holds true at present. Pemberton, in a recent paper, stated that there are no clinical signs of malignancy in fifty per cent of operable cases. The earliest clinical symptoms of pulling and drawing in the neck, with subsequent neuralgic pain in the neck and slight impediment in respiration or light attacks of smothering, represent an extension of the malignant process which is often too great for efficient surgical treatment. In the face of these rather discouraging opinions it is well to remember that Balfour found in one hundred three cases of thyroid carcinoma that there was an abnormal growth in the thyroid gland for an average of eleven and six-tenths years preceding operation. He suggested that operation, advised and carried out earlier, would have been a life saving procedure in many cases. Further evidence of the importance of this condition is found in the publication on the experience in the New York Hospital by Smith, Pool and Olcott who found carcinoma in 4.7 per cent of all thyroid tumors and in the experience of the Lahey Clinic, studied by Clute, who found that when he used invasion of

the blood vessels as a criterion of malignancy, as proposed by Graham, six per cent of all adenoma showed the presence of malignancy.

A case is reported of a woman thirty years of age on whom an operation was done for the removal of a small adenoma which proved on pathological examination to be carcinoma of the thyroid gland. There were no pre-operative symptoms or signs which lead the surgeon to believe that it was carcinoma before operation.

The early removal of a well encapsulated adenoma in which malignant degeneration has occurred should afford permanent cure. If at the end of a year there has been no recurrence, the patient may be sure of this. This case serves to illustrate and to emphasize the fact that all nodular goiters should be removed as soon as diagnosed.

At the Mayo Clinic study has shown that in eighty to ninety per cent of cases, the carcinoma of the thyroid gland has developed in a pre-existing adenoma. Up to the end of 1934 among the cases of adenomatous goiter, with and without hyperthyroidism seen at the Mayo Clinic, the cases of carcinoma of the thyroid gland would amount to almost three per cent. Also a most important fact is that in fifty per cent of the cases of carcinoma of the thyroid gland there were no definite clinical signs to aid in the diagnosis. In the case reported there was some question as to whether or not surgery should be advised. Pemberton believes, as do most of us who have studied the question, that surgical removal of all tumors of the thyroid gland should be advised in the absence of specific contraindication. Surgical removal, supplemented by irradiation, is the treatment of choice for carcinoma of the thyroid gland. Early surgical intervention followed by irradiation carried out early is done at a low risk and with very gratifying results.

This report, a considerable portion of which has been quoted directly, I regard as extremely important in that it again emphasizes the definite indication for removal of small apparently benign adenoma of the thyroid gland. There is a tendency of the medical profession to disregard the importance of removal of these adenomas and to even advise patients that they should not have or that they do not need surgery. This viewpoint is wrong, and it must be corrected if we are to reduce the mortality rate from carcinoma of the thyroid gland.

LeRoy D. Long.

### Total Thyroidectomy for Intractable Heart Disease. Summary of Two and One-Half Years Surgical Experience. David D. Berlin. Journal A. M. A., October 5, 1935, Page 1104.

The results obtained in ninety patients who have been submitted to this operative procedure indicate that this surgical therapeutic measure has a definite place in the treatment of chronic intractable heart disease.

The original researches on the velocity of blood flow by Blumgart and his co-workers demonstrated that an intimate relationship existed between tissue demands as expressed by the basal metabolic



rate and the speed of blood flow. As the demands of tissue metabolism mounted, the rate of blood flow was proportionately increased. With the metabolism depressed, as in myxedema, the velocity of blood flow was correspondingly reduced. In patients with circulatory failure the rate of blood flow was definitely slower than in compensated or normal individuals with a similar metabolic rate. In terms of the law of supply and demand the reduced speed of blood flow or supply of blood in a patient with congestive failure might be insufficient for the demands of the normal metabolism but might, nevertheless, be adequate for the lessened requirements of a reduced metabolic rate. This significant physiologic relationship between the demands of metabolism and the supply of blood by the heart led to the belief that the production of artificial myxedema in a patient suffering from chronic heart disease and having a normal metabolic rate might result in definite clinical improvement.

Striking clinical improvement in thyrocardiac patients following subtotal thyroidectomy is a well recognized fact and is in accord with the preceding consideration as far as it exemplifies the value of diminishing the load of an over-burdened heart by the reduction in the metabolic level.

The selection of patients properly suited for this operative procedure is of the greatest importance. Operations ill-advised will unjustifiably throw into disrepute an otherwise valuable therapeutic measure. From the onset the authors have recommended that this operation be applied only to those patients who, despite all available medical measures, continued to remain chronic invalids. In general they think it may be stated that those patients with a slowly progressive heart lesion who continue to suffer recurrent attacks of failure on exertion over a prolonged period of time will probably show a favorable response to operation. On the other hand, patients with congestive failure, regardless of cause or type of lesion, showing a short and rapidly progressive course are excluded as unfavorable risks. In the presence of severe impairment of renal function and acute pulmonary or active rheumatic infection, the operation should not be undertaken.

While the diagnosis of angina pectoris must be accurately established, the task of choosing from among these crippled cardiac patients subjects suitable for operation is not as great as in the group afflicted with congestive failure. If the patient's history shows a rapid progression in the number of attacks of coronary pain with frequent seizures at bed rest, thyroidectomy will probably not give lasting results. A recent coronary attack, within three months, likewise contraindicates operation. Healed coronary thrombosis, however, is not a contraindication. In several of the cases there was a history of more than one attack of coronary thrombosis, but in no instance did the last attack occur less than four months prior to operation.

When the metabolism is below minus fifteen per cent in patients of either group, they do not recommend operation.

Attention is called to the danger of bilateral recurrent laryngeal nerve injury. Direct laryngoscopic examination after the ablation of one lobe of the thyroid gland is advisable as a precaution against the development of bilateral abductor paralysis.

The pyramidal lobe and the retro-tracheal extension of glandular tissue in the region of the adherent zone must be carefully dissected and excised to effect a total extirpation of the gland.

When they began this work the authors were much concerned about the development of serious

post-operative tetany. To date they have not seen a single instance of severe tetany.

Since the underlying cardiac lesions still exist following operation, these patients continue to demand the same careful medical supervision post-operatively that any patient with heart disease requires. Furthermore, the depressed metabolism incident to the myxedematous state must be carefully regulated. Without thyroid medication, practically all patients will eventually develop untoward symptoms and signs of myxedema. With rare exceptions the metabolism can be maintained at a level of minus twenty-five to minus thirty per cent by the administration of small doses of thyroid daily. At this optimum level the untoward clinical manifestations of hypothyroidism are usually controlled with the heart still released from its previous burden. In the majority of instances the administration of thyroid one-fourth grain daily is sufficient to keep the patient in comfort. In others, one-half grain daily is required to maintain the desired metabolic level.

The absence of operative mortality in the last sixty-two patients submitted for operation is attributed to increased experience in medical management, improvement in surgical technique, and the use of local anesthesia.

An evaluation of the clinical results obtained in those patients who were operated upon from one to two and one-half years ago, reveals that of thirty-six patients with angina pectoris fifty per cent have been markedly improved. In this category are included patients who were previously incapacitated and were sufficiently improved by operation so that they no longer required medication and were able to return to work. In an additional seventeen per cent the attacks of coronary pain were diminished in severity and frequency.

The results in patients with congestive failure are equally satisfactory. Approximately seventy per cent derived a degree of improvement which was greater than that obtained by adequate medical therapy prior to thyroidectomy. Thirty-eight per cent of those totally incapacitated cardiac patients were markedly benefitted by operation to the extent that they were able to undertake, without circulatory embarrassment, activities such as had been previously denied them.

Approximately thirty per cent of the patients suffering either from angina pectoris or congestive heart failure showed little or no improvement following operation. The lack of improvement in this group can be attributed in most instances either to a rapid progression of the underlying disease or to an unduly low pre-operative basal metabolic rate. The result in this group emphasized the need of utmost care and caution in the selection of patients for operation.

LeRoy D. Long.

#### **The Treatment of Anal Fissure by the Injection of Alcohol (L'Alcoolisation dans le Traitement de la Fissure Anale). Andre Sicard. La Presse Medicale, July 31, 1935.**

In this very practical article about the management of a common malady, the author describes a simple, and apparently effective treatment to be employed in the case of a patient who, for one reason or another, will not submit to a more radical procedure.

The patient is placed in the genu-pectoral position. The folds of mucous membrane are gently separated until the fissure, which is usually situated about the mid-line posteriorly, is exposed. Employing a fine needle, introduced just external to the fissure, an injection of from two c.c. to three c.c. of forty per cent alcohol is injected through the same needle, left in place following

the injection of the novocain, the needle being advanced as the injection is made.

The method is ambulatory, painless and definite. Through a neurolysis of the tributary sensory nerve filaments, there is immediate relief of pain. The period of relief may not be permanent, and for that reason the patient should be advised that there may be a recurrence. For the same reason the procedure is not advised as a substitute for an appropriate operation. At the same time, it is so simple, so effective, and the relief in any case so long that it should be employed in the case of the patient who prefers it. LeRoy Long.

**Experiences With Amniotin in the Treatment of Gonococcal Vaginitis in Children. Richard W. TeLinde, M.D. and James N. Brawner, Jr., M.D., Baltimore, Md. American Journal of Obstetrics and Gynecology, October, 1935.**

These authors review the discouraging results of treatment of gonococcal vaginitis by the various chemical disinfectants. In a series of fifty of their own cases so treated the average period of treatment and observation before it was thought safe to discharge them was six months. In a series of two hundred twelve cases treated by chemicals and vaccines in the Bellevue-Yorkville Project, they published in 1933 the average duration of "treatment and observation" as fourteen months. In 1933 R. J. Crossen discussed the use of diathermy, reporting fifteen patients. Of these the ten acute cases required twenty-two weeks' treatment and the chronic cases four and six-tenths weeks. The practical difficulties in general application of this method in young children are obvious.

The basis of the present work lies in the fact that the mucosa in the adult vagina is composed of stratified squamous epithelium and it is a well known fact that the adult vagina is resistant to gonococcal infection. The susceptibility to infection by the gonococcus in the prepubescent vagina with its thin vaginal mucosa is also well known. Lewis, therefore, used Estrin injections in order to produce adult changes in the vagina in children suffering from vaginitis. In all of his eight cases the infection cleared and there was a recurrence in two cases only.

Drs. TeLinde and Brawner treated a total of thirty-five patients with the estrogenic preparation, Amniotin, administering it orally, hypodermically and in vaginal suppositories. They sought to determine the following points:

- "1. Will the administration of Amniotin cure gonococcal vaginitis?
- "2. If so, by what method of administration and in what dosage is it most effective?
- "3. What changes may be noted in the genital tract and in the breasts?
- "4. If changes are noted in these organs, how soon do they appear and when do they disappear after withdrawal of the hormone?
- "5. Whether or not the administration of the hormone is harmful to the patient?"

The patients were all watched carefully during treatment and observations made on general health, breasts, abdomen, external genitalia and the presence and character of the discharge together with stained smears. The vaginal washings in normal saline solution were examined microscopically frequently. Clippings were made for microscopic study before treatment and at intervals thereafter.

The small series of cases treated by oral administration showed no desquamation of epithelium and the biopsies from all the cases showed no change, even after the oral administration of 185,000 rat units.

Ten cases were treated with hypodermic injections of ethylene glycol Amniotin solution. Fifty rat units per day were used at first and later increased to one hundred rat units per day. "There was almost universal failure of cure with the amniotin in ethylene glycol solution." Having failed in their first effort to produce vaginal epithelial growth with Amniotin in ethylene glycol they treated thirteen patients by using the hormone in oil. Daily injections were given, hypodermically, doses ranging from fifty units to one thousand units in one c.c. volume. They noticed that many of the patients complained of pain and persistent soreness following injection of the oil solution.

With this preparation an average of 13.5 days was required before the epithelial shedding began. "Usually within a few days after the epithelial reaction became manifest in the vaginal washing, the smears became permanently negative, the average being four days after the beginning of the epithelial shedding." Biopsies taken after effective treatment showed a marked thickening of the epithelium and complete or almost complete absence of inflammatory cell infiltration.

As to the optimal daily dosage, they found that the patient given one hundred units per day responded as quickly as those given a larger dosage.

There were five of the patients treated with the oil preparation hypodermically in which the infection cleared up but recurred. The recurrences occurred on an average of 22.2 days after the cessation of treatment and they feel by their additional experience that treatment was discontinued too early. However, among the children treated with the oil preparation there were four who were not cured and these four also failed to respond to the hormonal action as judged by the vaginal washing and biopsy.

Because of the refractory cases from the oil preparation treatment and because of the unsatisfactory results with oral and hypodermic injections of the ethyl glycol solutions, they finally tried another method of employing the estrogenic hormone. Gelatine suppositories containing seventy-five rat units of Amniotin were used daily in a series of seventeen patients. Of these nine had failed to respond to oral and hypodermic methods and eight had received no previous treatment. The suppositories were given at bed time.

An average of 13.1 days were required before the epithelial shedding began and 17.8 days were required for a consistently negative smear. The average duration of treatment was 26.3 days. They remarked the similarity between this method of treatment and that of the oil preparation as to the time of shedding, the time of the consistently negative smear, and the time for complete treatment. They observed, however, that the number of units required for this activity was almost twice as great for hypodermic administration as was required per vagina. It was, therefore, their impression that the vaginal epithelial change was more marked when the drug was administered per vagina. The difference in the effect upon the breast tissue was also worthy of note since practically all of the patients who received considerable quantities of Amniotin hypodermically showed a certain amount of breast hypertrophy, whereas none of the group receiving treatment by suppositories showed any breast change. "The fact that less of the hormone was necessary to produce a cure, that the epithelial change was more pronounced, and that there was no breast change when the drug was administered vaginally, has led us to conclude that there is some local action which takes place, due to an increased concentration of the drug in the pelvic tissue."

There were five cases which recurred after sup-



pository treatment. All of these five patients who had recurrences were promptly cured by re-treatment with suppositories. There is an explanatory note as to the probable cause of recurrence by re-infection.

The summary and conclusion given below show clearly that these authors consider the suppository method of treatment superior and they are convinced that it does no harm.

"1. Amniotin administered orally or hypodermically in ethylene glycol solution is of no value in the treatment of gonococcal vaginitis. We have been unable to demonstrate any effect of the hormone on the vaginal mucosa or breasts.

"2. Amniotin in oil has proved effective both in the production of maturation of the vaginal mucosa and in its therapeutic action in gonococcal vaginitis in seventy-two per cent of the cases. In most of the patients receiving prolonged treatment breast hypertrophy was noted.

"3. Amniotin in suppository form has been proved to be effective in the production of mature vaginal epithelium and in its therapeutic effect in gonococcal vaginitis in all the cases in which we have used it. This group included some cases which had been resistant to the hormone when administered hypodermically in oil.

"4. The epithelial change produced by the hormone, whether administered hypodermically or in suppositories, is transient, and there is no clinical or experimental evidence to show that its administration is harmful in dosage necessary to cure this disease.

"5. So far as our experience has gone we have concluded that Amniotin administered in suppository form is superior to any other known method of treating gonococcal vaginitis."

Comment: This is by far the most encouraging report that I have seen upon the treatment of this very tedious, serious, and troublesome disease. In all clinics where careful records are kept, the period of treatment and observation for complete cure in these cases is a very long one. In addition to this one does not feel like hastily discharging these children as well because of the almost certain consequence of infecting their playmates.

These authors are very careful men and I am convinced they feel no harm was done. If this is true, the use of vaginal suppositories of this type for the treatment of gonococcal vaginitis will be an ideal replacement for the old chemical disinfectants and irrigation method.

Wendell Long.

### INTERNAL MEDICINE

Edited by C. E. Bradley, M.D., Medical Arts Building,  
Tulsa; Hugh Jeter, M.D., 1200 North Walker,  
Oklahoma City

By C. E. BRADLEY, M.D.

Cyanosis of the New-Born. E. A. Morgan, M. B., and Alan Brown, M.D., Toronto, Ont. J. A. M. A., Vol. 105, No. 14, October 5, 1935, Page 1085.

Cyanosis of the new-born infant is a problem which should challenge the obstetrician, general practitioner, as well as the pediatrician, because no other condition which occurs so frequently suffers from more slipshod methods of prevention, inaccuracies of diagnosis, and uncertainties of prognosis. Unfortunately, much of the supposed successful progress made in overcoming the condition in recent years is probably due to the large percentage of spontaneous recoveries.

The authors lists of commonly accepted causes

of cyanosis are listed below, and their comments on those that are not self-explanatory, noted:

#### CAUSES DUE TO ACCIDENTS OF LABOR

1. Aspiration of mucus.
2. Atelectasis.
3. Prolapsed cord or cord around the neck.
4. Early separation of the placenta and low implantations of the placenta.
5. Prolonged difficult labor.
6. Breech presentation with difficulty in delivering of aftercoming head.
7. Severe circulatory or toxic conditions of the mother, or drugs, particularly morphine, administered to the mother during labor.
8. Cerebral edema.
9. Intracranial hemorrhage (traumatic).

#### CAUSES DUE TO PATHOLOGIC CONDITIONS OF THE INFANT

1. Prematurity.
2. Persistent thymus.
3. Diaphragmatic hernia.
4. Tracheo-esophageal fistula.
5. Congenital cardiac malformation.
6. Tongue swallowing.
7. Pneumonia of the new-born.
8. Tetany of the new-born.
9. Sepsis of the new-born.
10. Intracranial hemorrhage (spontaneous).

The authors list Aspiration of Mucus, and Atelectasis separately, but discuss them simultaneously, because, as they say, they are nothing more than cause and effect. The mucus closes the alveolar passages, impeding the relief of the atelectasis, and acting in the same manner as if one deliberately would choke the infant by compressing the trachea with the fingers. Dunham has shown that x-ray greatly simplifies the usual difficult diagnosis of atelectasis.

Prevention of cyanosis due to aspiration of mucus, is not difficult if a metal suction-tip with smooth surfaces, bent to conform to the curve of the infant's mouth and pharynx, is used. However, delay in attempting to remove the mucus, use of coarse gauze to wipe out the secretions, or too vigorous use of a hard rubber catheter should be avoided. Care should be taken to avoid introducing pyogenic bacteria into the infant's respiratory tract, by inserting a tube which has not been sterilized.

Cerebral edema probably occurs more frequently than it is supposed, and resembles an intracranial hemorrhage in history of long and difficult labor and delivery, but differs from it in that the symptoms of cyanosis, vomiting, refusing to nurse, twitching of extremities, and even convulsions are delayed until eighteen to twenty-four hours after delivery. Moreover, the examination of spinal fluid is usually negative except for a few red blood cells appearing microscopically. Substantiating pathological evidence in support of this clinical theory is difficult to obtain, unfortunately. The theory depends on the evidence that the brain receives sufficient traumatism to produce a reactionary edema.

There is probably no condition more difficult to diagnose and prognose than intracranial hemorrhage, probably due to the fact that the hemorrhages vary so greatly in size, and because physical signs such as reflexes, muscle tone, and ocular manifestations cannot be depended upon as aids in diagnosis. Moreover, it is difficult to ascertain from the laboratory examination whether gross blood found in the spinal fluid is a result of intracranial hemorrhage or imperfect technique in the lumbar puncture; and even if the blood can be definitely shown to be of cerebral origin, it does not have the prognostic significance that has been attributed to it, because as Ford has shown, com-

plete recovery has been made in numbers of these cases. The following factors should be considered strongly suggestive, at least, of intracranial hemorrhages: Asphyxia palliata, difficulty in deglutition, stertorous breathing, full and boggy fontanel, convulsions—occurring after a difficult or instrument delivery or in a premature infant. The demonstration of gross blood in the cisternal fluid and to a lesser extent in the spinal fluid. An accurate prognosis cannot be given in the first few days, but if the hemorrhage is not subtentorial, in which case the infant usually succumbs in the first week, the chance for complete recovery is not as hopeless as has been heretofore believed.

Recent improvements in roentgenological technique which make the diagnosis of a greater number of cases of atelectasis possible, and advances in blood chemistry which make possible the diagnosis of tetany in the new-born, have greatly decreased the number of deaths that have previously been attributed to thymic dysfunction. The diagnosis of these cases of thymic hypertrophy were very logical since often they were greatly improved by roentgen-ray therapy, but it must be recognized that there was never any actual scientific proof that an internal secretion of the gland was responsible. And although we are still unable to account for some causes of sudden death, except by the theory of thymic dysfunction we should remember that it has never been shown by factual proof to be a cause of cyanosis in the new-born infant.

Tetany has been receiving a great deal of attention as a cause of cyanosis of the new-born. The clinical picture is similar to intracranial hemorrhage or cerebral edema except that the symptoms may occur any time within the first few weeks of life. The clinical symptoms are verified by low blood serum calcium. Faulty diet of the mother during pregnancy, hypoparathyroidism in the infant—possibly due to trauma, and alkalosis in the new-born have all been suggested as possible causes of tetany in the new-born infant.

The authors' analysis of present knowledge concerning cyanosis in the new-born infant is certainly a challenge to discussion and careful consideration of this important problem in order that a greater uniformity in the conception of the etiology of cyanosis and in the diagnostic methods employed may be reached.

By HUGH JETER, M.D.

**Pathological Changes Resulting From Accurately Controlled Artificial Fever.** F. W. Hartman and R. C. Major. From Department of Pathology, Henry Ford Hospital, Detroit, Michigan.—*American Journal of Clinical Pathology*, Vol. 5, No. 5, September, 1935.

The author reviews reports of the subject, summarizing previous investigations dating back as far as Welch's classical Cartwright Lectures.

Hyperpyrexia, artificial fever, is considered to give reactions which are commonly designated physiological, but may so far exceed the usual limits as to be deemed pathological. The author is concerned principally with the histological changes in tissues and functional manifestations which may be attributed to those changes.

He reports necropsy findings in two human cases, one of a white female, twenty years of age, treated by the Kettering hypertherm with temperature ranging from 103 to 106.6, having been given at the same time sodium amytal, grs. xii, in the first treatment, and grs. ix in the other treatments. The patient appeared to stand the treatments well and the tenderness and induration in the adnexa cleared. It appears from the brief

report that she was being treated for some type of pelvic pathology in which there was enlargement of the uterus and inflammation of the adnexa. Two days after the last treatment she became very irritable, had a "twitching spell," another period of generalized tremor seven days after the last treatment, developed an anxiety state and took fluids and food poorly, and three days later had a generalized convulsion lasting one and one-half hours, lapsed into coma and died on the eleventh day.

Necropsy showed the following:

"Anatomical diagnosis: Pregnancy, about two months; degeneration of the chorion with intra-uterine hemorrhage; hemorrhagic pneumonia; marked granular and hyaline degeneration of the zona fasciculata of the adrenals; hemorrhagic encephalitis, ring hemorrhages about vessels in base of brain; acute parenchymatous degeneration of liver and kidneys."

The second case was a male, forty years old, who was treated for syphilis of twenty years duration, apparently suffering from a cerebrospinal type of central nervous system lues. He was given eleven periods of fever under sodium amytal sedation with the Kettering hypertherm. Bismarsen was administered during the same period extending from March to September. "All treatments were tolerated well including the last except for the fact that he could not be aroused. He gradually became more comatose and showed right-sided hemiplegia. Death occurred twenty hours after completion of last treatment."

Necropsy findings are summarized as follows:

"Anatomical diagnosis: Syphilitic aortitis; partial occlusion of the orifice of the right coronary artery; glioma of the cerebrum with cyst formation; hemorrhagic encephalitis, base of brain; bronchopneumonia with oedema and congestion of lungs; vascular and granular degeneration, zona fasciculata of adrenals; acute parenchymatous degeneration of liver and kidneys; chronic catarrhal cholecystitis."

In addition to the reports on the two human cases a table is given including the report of twenty dogs which were treated in a similar manner and the author summarizes by giving the following:

Pathological changes which occurred in both the human and the animal cases: engorgement of the blood vessels, especially the capillaries, hemorrhage and degeneration. Hemorrhagic encephalitis in some instances, hemorrhagic pneumonia, degeneration of the cortex of the adrenals, and death, apparently the result of vascular collapse.

He further concludes that since both fever therapy and sodium amytal tend to produce marked dilatation and engorgement of blood vessels, the combination should not be used.

## EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.  
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**A Case of Unilateral Anophthalmos With a Cyst.** Kanji Kanda. Japan. *The British Journal of Ophthalmology*, September, 1935.

According to the author anophthalmos is one of the rare congenital anomalies in which, in spite of the name, a small or rudimentary eyeball is found usually in the lower lid. He says it is bilateral in almost all cases; and if the orbital integument is prolonged and covers the partially developed eyeball, then it is called cryptophthal-



mos. Photographs of the case before and after operation accompany the report as well as a photograph of the excised ocular cyst and microscopic sections.

The family history is negative. In the fourth month of pregnancy the mother fell and struck the lower part of her abdomen against a sharp object. Presumably the development of the ocular structures of the child were obstructed by this accident of the mother. The patient at the time of examination was five years of age, a male. The right eyeball showed several defects including a micro-cornea which was oval in shape, a defective iris in the lower part, the remains of a pupillary membrane, a choroidal coloboma and a gross lateral nystagmus of the globe. The lids and the conjunctival cul-de-sac were the only normal structures of the left eye. The mass located in the lower lid moved freely and was somewhat softer than the right eyeball. The depth of the conjunctival sac was about nineteen mm. Because of the projection of the wall of the sac it would be impossible to insert an artificial eye.

The object of the operation was the removal of the cyst and the construction of a suitable bed for an artificial eye. The patient was operated and following the operation the cavity in the orbit and the wound was tamponaded for six days. The tamponade was then removed and the edges of the wound carefully sutured. An artificial eye was inserted later and it was found that it was held in place very nicely, adding a great deal to the appearance of the child.

The pathological findings of the excised material are given with an accompanying discussion. He says that the excised ocular cyst, though it does not show the proper structure of an eye in the preparations, is considered to be a rudimentary eyeball which is the same as that of a cryptophthalmos. The cyst was ruptured during its removal. At the time of birth of the patient (a normal birth), there was also an atresia in another part of the body which was operated on successfully soon after birth by an orthopedic surgeon.

**Clinical Cases in Which Vertigo Is a Cardinal Symptom.** John B. McMurray, M.D., Washington, Pa. *Archives of Otolaryngology*, September, 1935.

The author speaks of the confusion in arriving at the symptom of vertigo when taking a history from the patient. Dizziness that accompanies an acute intestinal upset, the weakness resulting from an acute illness or a prolonged chronic suppuration, arterial hypertension, chronic myocarditis, heart block, valvular lesions of the heart, the anemias, neuropathic conditions and the palsy or imbalance of the ocular muscles are some of the conditions that may give rise to a sensation that the patient may describe inaccurately as vertigo.

This article deals with true labyrinthine vertigo which comes on suddenly with a duration of a few hours to a few days and a free interval of days, weeks or months. It occurs most frequently between the ages of thirty-five and fifty-five. There are a total of one hundred eighty-four cases reported. In one hundred four cases there was a diagnosis of toxic labyrinthitis and of the sixteen probable causes listed the four most common in the order of their frequency are chronically infected tonsils, infected teeth, chronic constipation and chronic prostatitis. The removal of this focus of infection gave good results in some cases of the most severe vertigo. He mentions a brilliant result obtained in the case of chronic prostatitis and also in that of a rectal abscess.

Furstenberg's diet and ammonium chloride did not

give as good results as others have claimed. A description of a typical attack of labyrinthine vertigo is given as related by a patient. Discussions are included by MacKenzie, Wishart, Slack and Shambaugh.

The author's summary is as follows: Vertigo is not an otologic problem, except when it occurs as a complication in cases of acute or chronic suppurative otitis media. The aurist can be of aid in determining the cause of the vertigo, but not more than the ophthalmologist. In many cases of intermittent vertigo of a severe type the hearing and labyrinths are normal as far as can be determined by the present methods of examination. It is possible that the lesion is located somewhere along the labyrinthine pathway, on the way either to or from the cerebral cortex. Whether the exciting cause is a disturbance of water metabolism, as suggested by Kopetzky and Dederding, the sensitivity of the nucleus, vestibular nerve or labyrinth itself to sodium, as suggested by Furstenberg, Lashmet and Lathrop, or to toxins from a distant focus, or protein sensitization cannot at present be determined. All patients with true vertigo should be thoroughly examined and all possible foci of infection eliminated, as there is sufficient evidence to warrant the conclusion that infection may be the etiologic factor. In cases of Meniere's symptom complex, if the side of the offending lesion cannot be definitely determined, section of the vestibular nerve does not promise brilliant results.

**Paralysis of the Larynx.** Charles J. Imperatori, M.D., New York. *Annals of Otolaryngology and Rhinology*, September, 1935.

The author gives an explanation of the median position of the vocal cords in bilateral abductor paralysis. If the recurrent laryngeal nerve is injured there is either an adduction with the vocal cords straight in the median line or the cord is found midway between abduction and complete abduction. Ziegelman shows by dissections that contrary to the usual teaching, in most instances the arytenoid muscle is supplied by the superior laryngeal nerve. The communications of the recurrent laryngeal nerve are discussed. New, Burger, Childrey, Smith, Lambert, Wallace and Lemere are quoted with some of their conclusions.

The author's conclusions are:

In many individuals the arytenoid muscle is innervated by the superior laryngeal nerve.

In no way does this suggested mechanism of continued adduction interfere with Semon's law.

This law of Semon's deals entirely with the abductor fibres of the recurrent laryngeal in that they become affected sooner than the adductor fibres.

Lemere has shown that the abductor muscles possess more lipid granules in them than the adductors and that they are more susceptible to trauma.

A total paralysis, so-called, with the vocal cords in the cadaveric position would seem to consist of a paralysis of the posterior crico-arytenoid muscles and the innervation of the arytenoid muscle by the recurrent laryngeal nerve.

A sustained midline position of the cords would consist of a paralysis of the posterior crico-arytenoid and the innervation of the arytenoid muscle by the superior laryngeal nerve.

The arytenoid muscle, assisted by the crico-thyroid muscle, both innervated by the superior laryngeal nerve, thus sustain the cords in the position of adduction.

Clinically this appears to be so, for in abductor paralysis, with the cords in adduction, there is

considerable relaxation and lessening of the dyspnea when the superior laryngeal nerve is blocked by the injection of novocain or alcohol, thus interfering with this nerve's action.

**Association of Optic Neuritis, Facial Paralysis and Facial Hemiatrophy.** Edward A. Shumway, B.S., M.D., Philadelphia. *Archives of Ophthalmology*, January, 1935.

This is a continuation of a case which was presented by the author before the Section of Ophthalmology of the American Medical Association in 1904. At the time of the original presentation the patient's age was nineteen, a female. Her chief complaint was blurring of print and aching in the eyes when she did close work. She did not complain of loss of sight but on examination her visual acuity was found to be V.O.D. 6/15 and V.O.S. 6/30. Ophthalmoscopic examination showed optic nerve atrophy, more marked on the left. It was a picture of postpapillitic atrophy. The visual fields were contracted and the light sense impaired. The right side of the face was flattened and there was an enophthalmos on this same side. She had reported for the eye examination in December, 1903, but about one year previously had been treated by another doctor for a typical facial paralysis of the right side of the face which appeared following exposure. She gave a history of always having had irregular menstrual periods. At the time of her facial paralysis, the red and white blood cells and hemoglobin were practically normal. The urine was negative. With five or six months of treatment the facial paralysis cleared up nicely, but the mother stated that the right eye was "smaller" than the left eye. When she appeared for treatment of the blurred vision her red blood cells were normal but she showed a white count of 13,500 with a fifty-eight per cent hemoglobin. The urine was still negative. The rest of her general physical examination was essentially negative. In the author's discussion at that time (1904) he mentions the possibility of an associated optic neuritis facial paralysis and hemiatrophy of the face as being a part of a multiple neuritis. He said the etiologic factor appeared to be an infection, the nature of which is as yet undetermined.

The subsequent history of this patient is that in 1909, seven years after the first attack of facial paralysis, she had oculomotor paralysis; in 1912 she had a recurrence of facial paralysis and another recurrence in 1919 on the LEFT side; six months later the RIGHT side was involved. Since by this time the importance of focal infections was being more strongly stressed she was referred to a dentist for a roentgen study of the teeth. Her left superior central incisor tooth had been filled with gold when she was thirteen years of age with subsequent death of the nerve. The roentgen examination showed a large irritated abscess here which was removed and on its removal, a long pus sac or dentigerous cyst, "as large as the end of the thumb" was found. This extended upward to the level of the floor of the orbit and the ethmoid sinus. The left lower molar was also abscessed. In 1920 the author examined her and found her without light perception, both optic nerves showing white with atrophy. Touch and temperature sensations were equal on both sides of the face. There was no sense of smell and very little sense of taste on the anterior part of the tongue. The diagnosis was polyneuritis of the cranial nerves, probably due to dental infection.

In the presentation of this very interesting case with its complete history the author cites other similar cases reported by other men who have recorded their findings. At the time of the original

presentation there had been only seven cases previously recorded. The function of the seventh nerve is discussed as well as the possible cause of the loss of the sense of smell and taste and the hemiatrophy. The author cautions us to be aware of the fact that the pendulum has now swung to the other extreme and that we may overlook other causes than that of focal infections.

The outstanding point of this article is the completeness of the record over a long period of years.

## DERMATOLOGY, RADIUM AND X-RAY THERAPY

Edited by William E. Eastland, M.D.

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**The Treatment of Nevi: A Review of Cases Treated During the Last Fifteen Years, With Analysis of End-Results.** William S. Newcomet, M.D. *Radiology*, Vol. XXII, No. 6, June, 1934, 684-693.

This essay deals with five hundred six cases of vascular nevi which the author has divided as follows: (1) hemangiomas, with subdivisions of different grades into capillary and cavernous, which comprised the largest, and totaled four hundred twenty-two cases; (2) lymphangiomas, which numbered fourteen cases; (3) fibro-angiomas, including the various forms of moles, which amounted to seventy cases. The possibility of malignancy developing in nevi is discussed, and in this series constituting five hundred six patients there were only three malignancies. In two of them they were due to pigmented nevi, and in one to a vascular nevus. It is thus seen that the possibility of malignancies developing in vascular nevi has been greatly over-rated. Newcomet then points out the complication of spontaneous ulceration occurring in vascular nevi. He believes this due to a small clot obstructing a branch of the vessels comprising a portion of the nevus. The circulation is interfered with to such a degree that it allows necrosis of the cells furnished with blood in the particular region. In cases in which nevi are covered with a thick layer of skin the results are better and there is less danger of ulceration than in cases in which the large vessels are very near the surface. When the tumor mass is comprised of spongy vessels the amount of radiation necessary is less. Where there is more fibrous tissue resistance is greater. Statistics are given revealing the distribution anatomically of the lesions over the body. Of the five hundred six cases mentioned, three hundred three of them were on the face showing their very important location from a cosmetic standpoint. In considering treatment the author goes into a brief discussion in regard to the possibility of surgically treating such lesions. He believes that surgical assistance sometimes is of value, but thinks that irradiation should be tried first. It is mentioned that the earlier the case is treated in the child's life the better the results will be. The author calls attention to the possibility of radiation in the interfering with the natural growth of tissue surrounding the nevi. For that reason he recommends the use of radium rather than roentgen rays in treating these lesions, as he states that the former can be confined to the affected part to a better advantage. In the hemangioma occurring on the scalp it is usually necessary to consider the possibility of permanent epilation due to the effects of radium. However, the essayist states that in all cases treated by him in which no other method complicated it, the hair grew back successfully,



even occurring in those areas in which it had not previously grown. In considering the technic of treatment the author states that cases vary so much in regard to the size and structure of the individual lesion that each case has to be individualized. Some generalizations are given, such as stating that the interval between treatments ranges from six weeks to two months in the average case; also, it is stated that the equipment varies considerably in its extent, such as different forms of flat tubes, needles and seeds, in order that they can be arranged to fit the particular lesion at hand. It is the prime object to obtain homogeneous radiation and thereby a smooth result. The author's personal idea of gold seeds is summed up as follows: "While gold seeds may be employed in cases in which interstitial treatment is desired, it seems unnecessary to leave some foreign body in a mass of this character. Small radon seeds (gold) are valuable in cases in which minor areas are to be treated in parts, and shields of various forms cannot be properly placed. In such cases it should be remembered that the time of application must be very short for the reaction is usually intense." Stress is laid upon the cardinal rule in treating all cases and that is a careful avoidance of excessive radiation. Another interesting paragraph in the summary of the article is as follows: "In the majority of cases, results of treatment were very satisfactory. The marks or tumor masses had disappeared, and the sites were practically normal and without scar. No other method could accomplish so much and, while the treatment is not so rapid as in other treatments, the results are better."

**Roentgentherapy in Metastatic Bone Cancer, With Report of Four Cases. J. Roemer, M.D. Radiology, Vol. XXII, No. 4, 499-503, April, 1934.**

This article deals with four cases of breast carcinoma which had been operated and later developed metastases in the bone. The case histories are given in rather complete detail in which it is shown that there is bone destruction as proved by radiographic evidence. In each case following the application of roentgen therapy to the affected bone, considerable or entire bone regeneration was made. In all cases the patient had lost considerable weight and was, in some of the cases, unable to walk. Following radiation all cases gained considerable weight, the health improved very much and all were able to walk. In one instance the author had received communication as long as four years later and the patient stated that she was still in good health and felt well. In another case the patient died in about four and a half years after receiving a pathological fracture of the right acetabulum. In the third case the patient lived comfortably for two years after x-ray therapy was given to the metastatic bone lesion. In the fourth case the patient was bed-fast for considerable length of time until roentgen therapy was given. In this instance she was up and about for over a year before she died in diabetic coma. The technic employed is given. It is the author's idea to show the great degree of palliation and bone regeneration that can occur following deep x-ray therapy. It is not regarded as a curative process.

**Radiation Therapy of Keloids and Keloidal Scars. Fred M. Hodges, M.D. Amer. Jour. Roentgenology and Radium Therapy, Vol. XXXI, No. 2, February, 1934, 238-243.**

This essay reviews the ideas of various writers in regard to the proper method of treating keloids. It is indicated that some regard surgery as being

best, others regard surgery plus the pre-operative or post-operative radiation best, while others regard radium or x-ray, or both, as efficient. Also, the principle of filtered or unfiltered radiation is considered, pointing out that some prefer one over the other. The author then discusses his personal idea of treatment in keloids. In very thick, localized lesions, especially where there are narrow, deep bands, he regards the use of surgery necessary, and then post-operative irradiation is given. He believes that in the average case there is such a wide area to be treated that surgery is not practical, nor is radium; hence, the use x-ray is given preference. Considerable stress is laid upon the superior results obtained by early treatment as is true in angiomas in infants. Unfortunately, most of the lesions are seen after they have been present for several years. It is recommended that the lesion be treated with a dose of from two hundred to two hundred fifty r of unfiltered rays given with eighty to ninety kv. every four to six weeks. The essayist goes into some detail to explain the technical variation in dosage due to the amount of area covered. The smaller areas naturally receive less r than when larger areas are treated and other factors are equal. The age of an x-ray tube also must be taken into consideration to know the intensity of dosage employed by the particular machine at hand. The purpose of x-ray or radium in treating keloids is of avoiding a recurrence as will occur in many instances where the lesions are surgically excised.

**Irradiation and Electrosurgery in the Management of Carcinoma of the Urinary Bladder. J. Thompson Stevens, M.D. Radiology, Vol. XXII, No. 1, January, 1934, 99-104.**

The author states that during the past seventeen years he has had such experience as to teach him to use pre-operative external roentgen irradiation in carcinoma of the bladder. The treatments are planned so that they will be completed in two weeks' time. The technic employed is cited which gives seven hundred fifty r units dosage to the bladder in the first period and then this is repeated, bringing it back to a total of fifteen hundred r units. Stevens sums up the advantages of pre-operative radiation as follows: there is a marked improvement in the patient's general condition; if he is suffering from hemorrhage it may stop within twenty-four hours. Further cystoscopic examination is more easily made as the contents of the bladder are free from the clotted condition incident to blood, pus cells and other debris. It tends to lower the possibility of implanting cancer cells in other parts of the bladder wall following operation. There is no loss of valuable time, as further investigation can be made during this time. The use of electrosurgery is advised by the essayist and he is emphatically in favor of it being done through a cystotomy by the superpubic route. In discussing electrosurgical procedure he first considers malignant papilloma, stating that this is a simple matter to destroy the entire growth at one sitting by means of the hot bipolar current; that is, electrothermique coagulation. In malignancies limited to the bladder without surrounding extension good results often follow resection by means of the bipolar cutting high frequency current. In case the tumor extends to organs outside the bladder wall, or localized tumors in the prostatic orifice or trigone, or involving an ureteral orifice, bipolar coagulation is advised followed by radiation treatment. The author makes the following statement: "Since only palliation is expected to follow in the vast majority of these hopelessly advanced cases, in many instances best results will naturally fol-

low through a coagulation of only that portion of the tumor projecting above the bladder wall, followed by radium therapy, or intense, highly filtered roentgen ray treatment. There is much evidence from many sources that roentgen therapy with modern dosage technic will supplant all other methods of treatment, particularly for the advanced cases." Stevens states that radium therapy is indicated in malignant papilloma and papillary and infiltrating carcinoma. When used following x-ray therapy the total dosage can be reduced, thereby eliminating the reaction in the bladder otherwise produced. In cases having multiple carcinomatous points the author advises the use of radium properly filtered, then packing gauze around the radium in such a way to make it two cm. from the radium to the lesion. In papillary and infiltrating carcinoma two different types of radiation therapy are mentioned, the first of which is insertion of platinum covered radium element needles into the tissues, which is the older method. These needles contain one to two mg. of element and one mg. is allowed in each cubic centimeter of tissue. Brief mention is made of the new method which has not been proved as to results but it recommends the use of radium element in capsules filtered through four mm. of lead and packed close to the involved pathology. The essayist recommends that further x-ray therapy should be given in three to eight weeks following the radium therapy in exactly the same methods as previously described. This brings the total amount of x-ray therapy up to three thousand r. The paper is summed up by results quoted from various investigators using radiation therapy in malignancies of the bladder. The author then quotes his own results which compare very favorably.

### ORTHOPAEDIC SURGERY

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#### A Neglected Factor in the Etiology of Gout. Joseph Krafta, Jr. *Bone and Joint Surg.*, Vol. XVII, No. 4, October, 1935.

The author directs attention to this ancient and honorable ailment "that has killed more rich men than poor, and more wise men than fools" and cites that medical interest in the etiology of the disease bids fair to outlive the disease itself. He states that gout shows three characteristics: it is afebrile with temperatures rarely exceeding one hundred degrees; it is spontaneous; and it involves the metabolism of the uric acid. He states that one reason that a rational explanation has not been forthcoming is due to the fact that there has been an oversight in the recognition of the source of endogenous uric acid.

In 1929 the author presented experimental evidence that the endogenous uric acid arose from the destruction of the extruded nuclei of the normoblasts in the maturation of the red blood cells. The origin of uric acid from nuclear material had long been accepted, but sources sufficient to account for daily eliminations when the subjects were on purine-free diets, had not been previously indicated.

From a base level of 154 milligrams, a Dalmatian coach-dog eliminated an average of 302 milligrams of uric acid after severe hemorrhage, as the red-blood count rose from 3,300,000 to 6,360,000. In a later test, after hemolysis with phenylhydrazine hydrochloride, the base level rose from 265 milligrams to 481 milligrams. At the same time, the reticulocytes (young red blood cells) increased

from 0.4 per cent to 3.6 per cent. Further tests show a complete correlation between output of uric acid and marrow behavior.

On theoretical grounds, there has been indicated a quantitative relationship between the normal daily activity of the hemolytic-hematopoietic system and the normal daily excretion of uric acid.

Uric acid is definitely associated with the marrow system, and the relationship of gout to the epiphyseal cartilages and ends of the long bones is of more than passing interest. Any condition which tends to stimulate the erythropoietic system becomes an important factor in the overproduction of uric acid and, thus, a potential etiological agent in gout. With this in mind, a review of two recently reported cases will be of interest.

Another phenomenon which has hitherto been obscure is the association of the "gouty diathesis" with polycythaemia. The obscure relationship between gout and lead poisoning lacks much of its mystery when it is remembered that lead is a very active hemolytic agent, and that every low blood count is compensated for by an increased marrow activity. The spontaneity, afebrile character, and the tendency to become polyarticular all fit in with the author's hypothesis. He says we are not in a position to say why gout does not occur in all cases of increased uric acid production, but we may explain the disappearance of the old-fashioned gout of a hundred years ago on the basis of the discontinuance of the medical practice of "bleeding," since even small hemorrhages are marked hematopoietic stimuli.

By directing attention to the principal source of the offending agent, uric acid, a more satisfactory treatment of gout is possible. All hemolytic and hematopoietic agents should be used with discretion. In determining whether or not such agents are indicated, the normal reticulocyte count of 0.5 per cent should be the guiding factor.

In closing this paper, the author would emphasize the fact that gout is not a dead disease. Of the one hundred sixteen patients presenting themselves for treatment at the Cook County Hospital over a period of six years, Williamson<sup>2</sup> states that only twenty-nine had been previously diagnosed as having gout. Thus the "foot-ail" or podagra, from which Harvey, Sydenham, Hunter, Washington, Hancock, Pitt, Fox, and other notables suffered, now goes about disguised under other names.

Reference: 2. Williamson, C. S.: Gout: A Clinical Study of One Hundred Sixteen Cases. *J. Am. Med. Assn.*, LXXIV, 1625, 1920.

#### Sam Browne Plaster-of-Paris Belt for Immobilization of the Chest. Richey L. Waugh, Jr. *Bone & Joint Surg.* Vol. XVII, No. 4, October, 1935.

The author gives an illustration in which he places plaster bandages around the lower chest wall without padding, a width of about four to six inches, then runs a plaster bandage up over one shoulder, about the same width, making the form of a Sam Browne belt. This appears to be a useful procedure, especially in cases when adhesive cannot be used well.

#### Fusion of a Knee Joint in Charcot's Disease. Mathew Cleveland, Jr. *Bone & Joint Surg.* Vol. XVII, No. 4, October, 1935.

The author reports the case of a colored woman, forty-six years of age, in which there was an injury to the right knee that later proved to be a Charcot joint. There was a marked range of motion in all directions and on weight bearing the knee went into hyperextension. The joint was opened and after removal of the debris, the articular



surfaces were denuded, and the patella was used as a peg to fit into a prepared mortise in the femur and tibia. Tissue removed showed chronic synovitis with obliterating arteritis.

Ten months after operation there was no evidence of fusion and the patient left the hospital against advice. About one year later the patient was re-admitted with the history she could barely get around on crutches, due to the marked instability of the knee joint. The right leg was a little more than an inch short, with considerable atrophy. The knee joint was markedly unstable, without pain or tenderness.

X-ray showed a marked cupping of the upper end of the tibia and a rounding of the femur. The patella had completely disappeared, but no progressive destruction of the joint was noted.

A second operation was performed to repair the pseudarthrosis. A definite false joint was found with the articulating surfaces covered with fibrous tissue. The bone ends were excised well back to raw, apparently healthy bone, and sliding grafts were applied across the joint space from the femur to the tibia. A plaster-of-Paris spica dressing was worn for three or four months, followed by the application of a plaster-of-Paris dressing to the leg only. This dressing was not removed until seventeen months after operation. The patient bore weight during the last seven or eight months of this period.

Upon removal of the plaster the knee joint was found solidly fused. The author presents illustrations showing this fusion to be firm.

### Physiology of Parathyroid

Adolph M. Hanson, Faribault, Minn., (Journal A. M. A., July 13, 1935), states that the parathyroids are concerned with calcium-phosphorus metabolism. Experimental work with animals indicates that calcium-phosphorus metabolism is of great importance in the body because it is necessary to the calcification of bone and teeth. The ionic calcium of the blood serum serves to control the varying normal degrees of irritability of nerve and of voluntary, as well as of involuntary, muscle. Because of this effect on the nerve endings and the involuntary muscle, it also increases vascular tone. It plays an important part in the clotting of blood and milk. That portion of the nonionized calcium which is diffusible may play its part with the ionized form in lessening the irritability of nerve endings and muscle. Little is known concerning these glands so essential to life. The parathyroid contains two types of cells: the principal cell and the oxyphil cell. This would indicate that the parathyroid has at least two functions: control of calcium-phosphorus metabolism and another as yet unknown. Which cell is extracted by boiling in hydrochloric acid and the active element of which is now known as one of the parathyroid hormones is not yet known. Calcium-phosphorus metabolism is not only concerned with the increase of ionic and dialyzable calcium in the blood serum and its normal retention and application to the needs of the entire body, but in maintaining the normal calcium-phosphorus balance in the amounts of each within the normal varying degrees of their interrelationships. The parathyroids subserve this function. The fetus is a calcium-phosphorus robber during gestation and lactation, and nature may have provided these accessory parathyroids for the purpose of meeting this as well as accidental demands. The normal amount of calcium in the blood serum in man is generally accepted at from nine to eleven mg. per hundred cubic centimeters; that of inorganic phos-

phorus, as an average upper limit of normal, at about six mg. per hundred cubic centimeters. In parathyroid dysfunction due to a deficiency of calcium in the blood serum, varying degrees of hyperexcitability of nervous tissue and muscle may occur. Hyperparathyroidism increases the viscosity of the blood and depletes the calcium of the osseous system. It may rightly be said that the normal function of the parathyroid is to preserve a normal nervous system and normal muscle contractility, including that of the heart, and to bring about and maintain the normal calcification of pathologic areas in healing processes. In parathyroid dysfunction methylguanidine may occur in sufficient concentration to be toxic. Experimental work and certain clinical observations suggest a detoxifying effect following the injection of active parathyroid extracts. The role that the parathyroids may play in maintaining natural immunity and normal healing power awaits scientific proofs to explain certain clinical observations.

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See your Secretary—pay your dues.

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### Aids to Good Eyesight

"It may be put down as a general and obvious truth that a healthy eye can exist only in a healthy body," says Dr. Hyman Cohen in "Hygiene of the Eye," the concluding chapter of "The Eye Book," in the September Hygeia.

Progressive shortsightedness with its inherent tendency to grow worse during the growth and school period requires special hygienic care. The eyes should be re-examined frequently. Glasses should be worn constantly. School tasks should be shortened as to time and amount and no extra tasks, such as music, sewing and special studies should be imposed on nearsighted children. Good print in the books that are read, proper light and proper postures are important.

Seats and desks in school rooms should be adjusted to the height of the children so that the erect sitting posture may be maintained and the habit of tilting the head to one side may be avoided.

Light is the medium in which the eyes work, as air is the medium in which we breathe. Light should be sufficient in quantity, free from glare, evenly diffused and properly directed.

## NEW BOOKS

**New and Nonofficial Remedies, 1935.** Containing Descriptions of the Articles Which Stand Accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1935. Cloth. Price, \$1.50. Pp. 510. Chicago: American Medical Association, 1935.

In this book the Council on Pharmacy and Chemistry lists and describes the medicinal preparations that it has found acceptable for general use by the medical profession. A glance at the list of the Council members and the long list of consultants appearing in the first part of the book gives ample warrant for the authority of the Council's selections.

Not only does the Council "accept" new preparations but from time to time it omits those which have been accepted but which have not with the lapse of time upheld their original promise of therapeutic merit. The list of omissions for 1934 shows that the Council has been mainly concerned in this respect with *B. acidophilus* preparations

and with antiseptics. Several preparations of each class have been omitted. The list of admissions does not reveal the presence of any preparation that promises to be epoch making in the sense that insulin was, for instance. However, the following newly accepted preparations are noteworthy: Carbarstone, an arsenical used chiefly in the treatment of amebiasis (the Council published a special report on this drug, supplementing the preliminary report of 1932); Hippuran and Diodrast, two different types of urographic contrast mediums; Carotene, the precursor of vitamin A; Dilaudid, a substitute for morphine; Neo-Synephrin Hydrochloride, which has a number of advantages as a vasoconstrictor over synephrin tartrate; and Diothane, which represents a type of local anesthetic entirely different chemically from any heretofore accepted for N. N. R.

The description of products containing vitamins A and/or D have been revised to give the potencies in terms of the recently adopted pharmacopoeial units, thus bringing some measure of uniformity into this heretofore chaotic field. No doubt the book will be revised next year to conform with the new Pharmacopoeia in its entirety.

A valuable feature of the book is the grouping of preparations in classes. Each of these is introduced by a general discussion of the group. Thus the silver preparations, the iodine preparations, the arsenic preparations, the animal organ preparations and the biologic products are each preceded by a general discussion of the particular group. These general articles compare the value of the products included in the group with similar pharmacopoeial and other established drugs which it is proposed that these proprietary preparations shall supplement or supplant.

Physicians who wish to know why a given proprietary is not described in New and Nonofficial Remedies will find the "Bibliographical Index to Proprietary and Unofficial Articles not Included in N. N. R." of much value. In this section (in the back of the book) are given references to published articles dealing with preparations that have not been accepted. These include references to the Reports of the Council, to Reports of the A. M. A. Chemical Laboratory and to articles that have appeared in The Journal.

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**Annual Reprints of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1934, with the Comments That Have Appeared in The Journal.** Cloth. Price, \$1.00. Pp. 135. Chicago: American Medical Association, 1934.

Each succeeding volume of reports of the Council reveals more of the long and successful fight in the interest of rational therapeutics. The Council is no longer chiefly concerned with noisome proprietaries and yet this latest volume contains reports on such articles as "Vita-Cell," a secret preparation marketed with exaggerated claims, and "Raylos," a shotgun preparation marketed in a way to promote its ill-advised use by the public. Most of the "unacceptable" reports in this volume are concerned with products that may have some merit but are not offered to the public in a way which experience has taught the Council is necessary before a therapeutic agent is acceptable. Such products are Iodine Dusting Powder (Sulzberger), rejected for lack of clinical evidence of its advantage over one of its constituents; Pernoston, rejected because of lack of clinical evidence to justify routine intravenous injection of barbitol compounds; Di-Hydranol, a claimed bactericidal agent

proposed for use as an "intestinal antiseptic," a claim not supported by sufficient clinical evidence; and Squibb Adex Tablets, a product containing a concentrate of vitamins A and D, for which the firm could not agree to adopt a more informative name.

To those who have followed the Council's investigation of *B. acidophilus* therapy, the report "Acidophilus Bacillus Liquid-Mulford and Mulford Acidophilus Bacillus Block Omitted from N. N. R." will be of interest. The Council has apparently not yet reached an ultimate conclusion concerning acidophilus therapy, but it has for years held that no product could be expected to be of value unless it could show at least one hundred million viable *B. acidophilus* organisms at the "date of expiration." Competent bacteriologic examination showed that the two preparations here reported were inferior to this standard. Further grounds for omission were the failure of the manufacturer to comply with certain stipulations in regard to labels and advertising. Another noteworthy omission is that of Alpha-Naphco and its dosage forms, omitted because the Council on reconsideration found that it is a weak antiseptic.

The Council also issues preliminary reports, which define the status of new preparations for which the evidence is not yet sufficient to justify their presentation to the medical profession generally. Preliminary reports do not imply rejection but rather postponement of consideration until more evidence is reported by competent investigators. These reports are the outposts of therapeutic progress and as such are valuable sources of information to physicians. In this volume there are preliminary reports on Adrenal Cortex Extract, concerned mostly with scientific terminology, Cysteinæ Hydrochloride, Dihydroxy-Anthranol (Anthralin), Gastric Mucin, Hemoprotein (Brooks), Phenylmercuric Nitrate and Phenylmercuric Chloride.

Illustrative of the Council's efforts to keep those concerned informed of the basis for its actions are the "Recent Revisions or Elaborations of the Council's Rules of Interest to Manufacturers and the Medical Profession," which have appeared in the last two volumes. These inform the profession of the various problems which arise and the care given to their consideration. To be commended also is the "Report on Sterility of Ampule Preparations."

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**Diseases of the Nose and Throat, for Practitioners and Students,** by Charles J. Imperatori, M.D., F.A.C.S., Professor of Clinical Otolaryngology, New York Post-Graduate Medical School, Columbia University, New York, and Herman J. Burman, M.D., Instructor of Clinical Otolaryngology, New York Post-Graduate Medical School, Columbia University, New York. 480 Illustrations. Price \$7.00. J. B. Lippincott Company, Philadelphia.

Brief review of this new book brings not only to the eye, ear, nose and throat specialist, but to the general practitioner a very valuable work. It is the first book of this kind that has ever been brought to our attention that deals with subjects from the standpoint of the general practitioner and gives some insight into the diagnosis and fundamentals of the treatment of these conditions. It will also appeal to the specialist as it goes into details of the latest procedure carried out in this special line of work.

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Do not make your Secretary do all the work—See him. All memberships expire December 31st.



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**SPECIALTY SALESMEN**—We are looking for the highest type of specialty salesman to introduce the **UTERECTORS** to physicians all over the country. If you are interested in adding to your income by handling this favorably received appliance, please communicate with us for further details. The Bley Corp., 715 Lake St., Chicago.

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# THE JOURNAL

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OKLAHOMA STATE MEDICAL ASSOCIATION

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NUMBER 12

## Symposium on Indications for Anesthetics

### *Cyclopropane—A New Gas Anesthetic—Report of One Hundred Twenty Cases*

GEORGE S. MECHLING  
OKLAHOMA CITY

Almost a century has passed since the advent of anesthesia threw surgery into its maze of problems and achievements. Although major progress in surgery has depended extensively on the existence of anesthesia, the latter science has not shared the attention shown the former.

#### HISTORY OF CYCLOPROPANE

Cyclopropane (Trimethylene) was first prepared by Freund, a chemist, in 1882. It was first administered in human cases by Dr. Ralph M. Waters of the University of Wisconsin in December, 1930. Since that time the gas has been used by a large number of anesthetists who report very favorably on it. Complete reports are not available as yet on its effects on different organs, as for instance the electro-cardiograph studies. It has been found, however, to show no impairment on the liver and kidneys. Cyclopropane is pleasant to take and lacks the irritating qualities of other anesthetics when given in the low concentrations. It has a characteristic sweetish odor, somewhat similar to chloroform. Its induction is fairly rapid and pleasant and without the tendency to make the patient feel as though he were smothering by reason of its being given with large quantities of oxygen.

#### PREMEDICATION

Special attention must be devoted to the preliminary narcotics in order to obtain a smooth and uneventful anesthesia.

Workers have found it best to cut the ordinary doses of opiate to about half the usual doses given for gaseous anesthetics. Scopolamine has been found to be preferable to atropine. Use of the Barbiturates is to be discouraged because we must bear in mind that Cyclopropane does not stimulate respiration but on the contrary lessens the amplitude of the respiratory excursions as anesthesia is deepened. This latter will also explain why the opiate should be reduced. The anesthetist in order to give a smooth Cyclopropane anesthesia must use good judgment about the size dose of the preliminary medication.

#### TECHNIQUE FOR ADMINISTRATION

The technique of administration differs from the other gaseous anesthetics in that the patient is started off with large quantities of oxygen, then the Cyclopropane is gradually given for from a few seconds to several minutes. Care must be exercised to avoid over dosage. The administration is similar to chloroform, that is a drop at a time. The Carbon Dioxide Absorption Technique (Soda Lime Filter) is the method to use in its administration; however satisfactory anesthesia can be given with pharyngeal tubes, intratracheal and by the ordinary rebreathing apparatus.

#### SIGNS OF ANESTHESIA

The signs of anesthesia are similar to the other anesthetics except that the pa-



tient always has a good color and he has very little pupillary changes. The character of the respirations are different in that they are shallow and without effort. Of the different types of operations in the one hundred twenty cases that Cyclopropane was given, sixty-seven were acute, emergency or urgent cases, fifty-three were elective cases. The duration of the anesthesia was from five minutes to as long as two hours and the ages varied from three and one-half years up to and including one person eighty-three years of age. Consciousness was regained in a few minutes to as long as two hours. Of those cases that had no preliminary preparation the recovery was rapid. On recovery of consciousness 72.5 per cent had neither nausea nor vomiting. Nausea occurred in 27.5 per cent of the cases in the first eight hours. Opiates were accountable for the nausea in seventy-five per cent and vomiting in sixty-five per cent of the cases because with the change of the opiates this trouble ceased. The anesthetic agent was blamed for the nausea and vomiting in thirteen per cent of the cases. It is interesting to note that those patients who had an alkaline reacting urine showed the least tendency to post-operative nausea and vomiting, while those cases with an acid reacting urine showed the greater tendency. It was also interesting to note that the more highly acid the urine the more severe was the post-operative nausea and vomiting.

Post-operative recovery was uneventful in eighty per cent of the cases. The following show the number and kind of post-operative complications: Shock in nine cases, urinary retention in five cases, drop in blood pressure in four cases, headache in two cases, ileus in one case, G. I. upset eighth day post-operative in one case, and flu eighth day post-operative in one case.

In the one hundred twenty cases that Cyclopropane was administered three deaths have occurred as follows:

Cerebral embolus seventh day post-operative.

Pneumococcic meningitis following flu and purulent bilateral otitis media sixteen days post-delivery at term.

Carcinoma of thyroid twenty-seven days post-operative.

ADVANTAGES OF CYCLOPROPANE

The advantages of this new gas are: The oxygen want of the patient is not enhanced by the anesthetic. It is a more potent gas and only in rare instances has it been found necessary to add ether. It is non-irritating to the respiratory tract if given in the average concentrations. The plane of anesthesia is easily and quickly controlled by varying the amount of oxygen being given. Less narcotics need be given with this gas. The induction is pleasant, rapid and free from the apparent suffocation found in the other gases. The type of respiration favors abdominal and chest surgery.

CONCLUSION

In conclusion we feel that in proper hands this new gas is as safe as any of the inhalation anesthetics and perhaps more safe than the majority of them. We feel that it is the outstanding inhalation anesthetic without exception. We have used it in very poor operative risks such as cardiac decomposition, some pulmonary edemia, extremely obese patients, old people and all made an uneventful post-operative recovery as far as the anesthetic was concerned. Of the one hundred twenty cases all patients agreed that it was very pleasant and easy to take. We feel, gentlemen, that we owe a vote of thanks to such men as Lucas and Henderson of the University of Toronto, Dr. Waters of the University of Wisconsin, and Freund, the chemist, for the work done to make it possible for us to use this most exceptional gas.

TYPES OF OPERATIONS AND NUMBER OF SAME:

Appendectomies .....	31
Pelvic Operations .....	26
Operations on Extremities .....	12
Fractures .....	12
Dilatation and Curettage .....	10
Opening Ear Drum .....	7
Plastic Operations .....	6
Perineorrhaphies .....	6
Hemorrhoids .....	5
Forceps Delivery .....	4
Rectal Fistula .....	4
Thyroid .....	3
Cholecystectomy .....	3
Hernia .....	3
Bone Graft .....	3
Breast Amputation .....	2
Rectal Abscess .....	2
Amputation .....	2
Cystoscopy .....	1

Ceserean Section .....	1
Fistula in Chest .....	1
Frontal Sinus Operation .....	1
Pelvic Examination .....	1
Perforated Gastric Ulcer .....	1
Hydrocele .....	1
Bartholan Abscess .....	1
Tonsils .....	1
Delivery .....	1
Pilonoidal Cyst .....	1

#### RANGE OF EXPLOSIBILITY

Cyclopropane 80%	Oxygen 20%	No explosion
Cyclopropane 75%	Oxygen 25%	No explosion
Cyclopropane 71%	Oxygen 29%	Moderately explosive
Cyclopropane 66%	Oxygen 34%	Very explosive
Cyclopropane 27%	Oxygen 73%	Very explosive
Cyclopropane 25%	Oxygen 75%	Very mildly explosive
Cyclopropane 20%	Oxygen 80%	No explosion

First Planes Anes. 7.4% C3H6.

Second Planes Anes. 13.1% C3H6.

Third Planes Anes. 23.4% C3H6.

Fourth Planes Anes. 42.9% C3H6.

Its range of explosibility according to Madison Wisconsin workers is much less than of ethylene or of the nitrous oxide, oxygen and ether mixture which is so commonly used.

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## Sodium Evipal

J. H. ROBINSON, M.D.  
OKLAHOMA CITY

Sodium Evipal is a derivative of barbituric acid. It is used intravenously to induce general anesthesia for minor or short major surgery.

This preparation was developed in Germany some three years ago. (My first experience with the drug was about one year ago as Sodium Evipan, the English preparation, supplied by Dr. J. B. Barger,

of St. Louis, via his father, Dr. G. S. Barger of Purcell, Oklahoma. So far as I can determine Dr. Barger, of St. Louis, and his associates were the first to use the preparation in the United States.) Now Sodium Evipal is produced in this country by Winthrop Chemical Company of New York, in ampules of one gram of crystalline salt. This is dissolved in ten c.c. of sterile distilled water immediately before its use. The operative field is prepared and when all is in readiness the intravenous injection is started. From 3.5 to 5 c.c. is injected in the first minute. At about this time the patient is sufficiently anesthetized for the operation to begin. The needle is left in the vein and additional fractional dosage is injected to maintain adequate anesthesia, or until the maximum dose of ten c.c. has been given.

In experienced hands twelve to fifteen c.c. is given with perfect safety. The manufacturers recommend ten c.c. for a patient weighing one hundred sixty-five pounds as a reasonable average clinical dose. We have used Evipal in Wesley Hospital in about thirty-five cases. The amount used varied with the need up to ten c.c. and the operations lasted as long as forty minutes. The ages of the patients have varied from twelve to seventy-five years, and the operations have varied from reductions of fractures, drainage of abscesses, curettage, iridectomy, esophagoscopy, suprapubic prostatectomy, appendectomy, salpingectomy and hysterectomy. In only two patients was it necessary to add inhalation anesthesia. This would likely not have been necessary in more experienced hands where greater dosage could have been given without fear. We are increasing our dosage as we become better acquainted with the drug.

In Europe Evipal is accepted as a valuable and safe method of inducing anesthesia. Dr. Hans Killian, of Germany, reported a survey of fifteen thousand cases of Evipal anesthesia where only one death was attributed to the anesthetic. The committee on anesthesia of the Medical Research Council of London (*Lancet*, July, 1933), made a report of a survey of twenty-five thousand cases, and drew the conclusions that Evipal can be relied upon for an excellent anesthesia for minor and short surgical procedures.



Surgical relaxation is equal to that of spinal anesthesia. There is little or no post-surgical nausea. I have done minor operations upon patients within an hour after lunch with no nausea following, and the patient up and about the room within thirty to forty-five minutes.

#### CONCLUSIONS

1. Evipal has a place among other general anesthetics.
2. It is a safe and valuable general anesthetic for minor, and many major operations.

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## *Nupercaine Infiltration Anesthesia*

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Nupercaine is a quinoline derivative, differing therefore, from cocaine and other commonly used local anesthetics.

It is obtainable for infiltration anesthesia in ampules of five and twenty-five c.c. of 1/1000 physiological sodium chloride solution. The drug is estimated to be from one-half to one-twentieth times as toxic as procaine, depending upon the reports of a number of observers.

This consideration does not assume such paramount interest when one considers the fact that Nupercaine is effective in solutions of 1/1000 as 1/2000 for infiltration anesthesia. The maximum recommended dosage is two milligrams per kilo body weight. In vascular areas, one milligram per kilo body weight is a fairly safe rule.

Immediately on injection, the drug produces a local vasodilatation which diffuses it rather rapidly. It seems rational, all other indications being equal, to add three to five minims of adrenalin per one hundred c.c. of solution. This fixes the drug locally, enabling the use of smaller dosages, and lessening the dangers of general systemic reactions. The anesthesia comes on in approximately fifteen minutes, so that one must necessarily wait a while before beginning to work. This disadvantage is readily offset by the most important

advantage in its use; namely, that the anesthesia lasts for several hours. This enables the surgeon both sufficient time to give complete attention to all necessary details, and furthermore prevents the patient from having pain in the local operative area until after he has had several hours to react.

The indications for infiltration anesthesia have been widely discussed and are generally recognized; however, in this connection I should like to stress only that if there be a place where general anesthesia justly deserves a bad reputation, it is in surgery about the neck.

We have found this drug, Nupercaine, of great assistance in operating about the neck, especially upon severely toxic goiters, where it seemed inadvisable to give even the usual gas analgesia, and upon operative procedures of the oesophagus which are necessarily rather prolonged. Here, we have adopted the plan of first blocking the sensory nerves as they come over the sterno-mastoid, with Nupercaine, and supplementing with procaine in the immediate operative field. We have noticed no toxic effects of the drug in the minimum amounts thus used, and the results have been highly satisfactory.

\* \* \*

## *Inhalation Anesthesia By Ether*

LEROY LONG, M.D.  
OKLAHOMA CITY

In the case of the average individual who does not have diabetes, hyperthyroidism, pulmonary pathology or renal pathology, ether is usually a very satisfactory agent for the production of inhalation anesthesia, provided it is administered in a proper way and provided, also, that the surgeon does his part in connection with the important matter of minimizing trauma and the length of operative procedures.

One of the disagreeable features in connection with the inhalation of ether is the increased production of mucous in the respiratory tract. The administration of atropine half an hour or so before the an-

esthetic is begun seems to be of distinct service in preventing this difficulty. It would seem, too, that the proper or improper administration of ether will determine to a very large extent whether there will be great difficulty in connection with the production of mucous. If the ether is crowded from the beginning, there is usually rapid production of material in the respiratory tract, followed by considerable embarrassment.

It has been our observation that ether may be given with considerable rapidity by inhalation, provided that the ether mask is removed entirely when the patient begins to struggle and show some evidence of cyanosis. It is quite possible that our conception of the situation is not accurate, but we have a very distinct conviction that the method of rapidly increasing the amount in order to overcome straining and distress is a mistake. We believe that we have observed that when the mask is removed and the patient is permitted to breathe fresh air for a few moments, the ether being started again in a rather moderate way, there is very much more pleasant, very much more harmless, and very much more successful production of surgical anesthesia.

The chief danger in connection with ether is the administration of an over dose. We are quite sure that in the average surgical operation where ether is employed as the anesthetic agent much more is administered than is actually necessary. It is quite clear to us that when the patient is once thoroughly anesthetized he may be kept anesthetized by the administration of a very small amount of ether. It is not at all necessary to continue to pour ether on the mask in large quantities. Not only is it unnecessary, but, in our judgment, it is a very grave mistake. When, after a surgical operation where ether has been employed by inhalation, the patient is found in profound slumber with a damp skin half an hour after he has been returned to bed, it is fair to conclude that he has had entirely too much ether.

Much of the time spent in the performance of a surgical operation is spent in doing work that does not produce very much pain. In an appendicectomy, for example,

most of the pain is produced while the abdomen is being entered and the cecum removed from it. There is little or no pain in connection with the necessary cutting and sewing attendant upon the removal of the appendix. During this period but little ether is necessary, and it is the duty of the surgeon to advise the anesthetist that a period has been reached when it is not necessary to give very much ether. The performance of a gastro-enterostomy is a very typical example. After the stomach and jejunum have been delivered and placed in position, there is practically no pain until the closure of the abdomen is begun. The same may be said in connection with the performance of many other operations, and the lesson to be learned from it is that there should be close cooperation between the anesthetist and the surgeon so that during this period when but little pain would be produced, even though the patient were awake, only enough ether should be given to maintain anesthesia, or, rather, analgesia, speeding it up a little just before the time to finish the operation when there may be more painful sensations because of the closure of the wound.

In the case of the average individual, the danger from ether is in connection with the respiratory tract. It is a very distinct danger and everything possible should be done to protect the patient against the danger. It is our feeling that, in the average case, the patient may be adequately protected so that he will not run any more risk of difficulty in connection with the respiratory tract than he runs in connection with the administration of any other kind of anesthetic agent, even though it be an agent for the production of local anesthesia.

We do not have any prejudices in connection with the administration of the various anesthetic agents, but we do have certain very strong convictions in connection with the different agents. After observing more or less the effects from day to day, we use ether most often because we believe that it is, by and large, one of the safest agents for the production of anesthesia, provided, of course, it is administered in a proper way.



# Some Observations on the Treatment of Gonorrhea in the Male With Special Reference to the Corbus-Ferry Filtrate

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In recent years the trend in the treatment of gonorrhea in the male has been along conservative lines based on the same immunological principles that underlie other infectious diseases.<sup>1</sup> Fundamentally the resistance to an infective organism depends on the presence of the bacteria and their products (antigen) stimulating the cells of the organism to produce specific antibodies. The course of the disease depends on the balance between antigen and antibody. Until sufficient antibodies are formed to destroy the gonococci, cure is impossible.

The folly of attempting to slay the deep lying gonococci with strong germicides and mechanical devices has become apparent in both laboratory and clinical studies. The harm that such abortive attempts do to the immunological balance between the delicate tissue cells and the bacteria has resulted in much chronic gonorrhea with many varied complications. Likewise the hopeful and extensive use of the numerous types of vaccines has failed to improve appreciably the outlook in this disease;<sup>2</sup> on the contrary it has been far from free of disagreeable complications.

As a result of disappointment along these two frontiers of attack, many clinicians have adopted a cynical therapeutic nihilism. The majority have, however, under the leadership of Pelouze, Keyes, Herrold, and others come to realize that cure lies in the immunological response of the patient to the invading organism. The part of the patient in establishing this immunity consists in following the rules of good hygiene, avoiding the use of alcohol and sexual excitement. The role of the physician is concerned with the establishment and maintenance of free drainage of the products of inflammation, the offering

of mild, gentle mucosal stimulation by proper chemicals, and the avoidance of over treatment, rough treatment and foolish treatment.

This concept of the management of gonorrhea, with minor variations in the practical details, is the basis of our best methods of treatment at the present time. By such unheroic measures the duration of the disease is brought within reasonable bounds. This is the method of treatment with which all other types must be compared to evaluate properly their claims as to shortening the length of infection and lessening the complications of the malady.

## THE CORBUS-FERRY FILTRATE

In view, however, of the obvious imperfections of the foregoing mode of therapy and the lack of specificity of its bacteriological attack, numerous investigators have sought for definite and specific antigenic agents to enable the body to overcome the gonococcal infection.

One of the latest of these agents to be presented to the profession is the so-called "Corbus-Ferry Gonococcus Filtrate."<sup>3</sup> This product is stated to be a specific soluble extracellular toxin obtained by filtering broth cultures of several strains of the gonococcus after appropriate incubation. The strength of the product is standardized and furnished to the doctor in rubber stoppered vials. This filtrate, then, differs from previous biologic agents used in this disease in being an exotoxin rather than a vaccine or a suspension of bacterial cell bodies.

The other unique feature in connection with the use of this filtrate is the mode of administration, namely by the intradermal route. Corbus ascribes the superiority of such injection to the fact that the skin

is an organ of vital importance in the production of immunity.

Repeated weekly injections are purported to build up an active immunity in the patient which enables him to throw off the gonococcic infection. It is applicable in all types of gonococcic infection.

#### EXPERIENCE OF OTHERS WITH THE CORBUS-FERRY FILTRATE

In a comprehensive report published in 1932, Corbus<sup>3</sup> analyzed the results of treatment with the filtrate in one hundred fifty-one male patients: acute eighty-six; sub-acute twenty-three; chronic forty-two. In the acute and sub-acute cases the average time required to rid the patient of the gonococcus permanently was ten weeks. The shortest period was four weeks in the acute group and one week in the chronic group. It was pointed out that in view of the time required to establish an active immunity, the discharge might not disappear for five to eight weeks. In all these cases doses much higher than those now recommended were used.

Early this year Cumming and Burhans gave their experiences with the filtrate.<sup>4</sup> They used it in a dosage range of 0.1 to 0.3 c.c. These authors graded the skin reaction at the site of infection from "one plus" to "four plus" according to the size in inches of the reddened area developing around the wheal. In their series it required an average of five weeks to banish the organisms. In fourteen consecutive clinic cases treated by this method alone the disease remained confined to the anterior urethra in every instance and there were no complications or recurrences. They conclude that the filtrate is of specific value in treating all stages of gonorrhea. No comparison with a control series, however, is presented.

The Council on Pharmacy and Chemistry of the A. M. A. has made two preliminary reports on the filtrate. In each of these it has postponed acceptance awaiting more evidence of the clinical value of the substance.<sup>5 6</sup>

#### METHOD USED IN THE PRESENT STUDY

In an effort to determine at first hand what might be expected from this new type of therapy fifteen cases were studied

in the urological division of the Nuckols-Vance-McElroy Clinic. These are reported below in some detail. In the interests of fairness to the method it was used only on those patients who could report regularly and frequently to the clinic, who were cooperative in conduct, and who were really desirous of getting well. No irresponsible patients of the charity group were included. The time over which the patients were treated and observed extended from January to July of this year.

Every effort was made to adhere to the details of administration and dosage suggested by the manufacturers. The injections were given with a twenty-six gauge hypodermic needle and a tuberculin syringe graduated in one-hundredths of a cubic centimeter. The recommended maximum dosage for the stage of the disease was never exceeded. No injection was repeated in less than one week. In other words the results of the treatment can in no way be laid to faulty technique.

As a routine the filtrate therapy was supplemented by the Pelouze method of local treatment.<sup>7 8</sup> This is the method which in the past several years has given us the best results both in hospital and private clinic practice. Briefly it consists in the early infections, of copious gentle daily irrigations of the anterior urethra with warm 1:5000 potassium permanganate followed by the instillation of a few c.c. of mild silver protein in five per cent solution. In the chronic posterior infections low pressure antero-posterior intravesical irrigations are used. Prostatic massage at bi-weekly intervals is added as the infection becomes quiescent.

When the Pelouze method is followed exclusively we have obtained cures in the anterior urethritis cases in an average of six weeks. Approximately half of the anterior cases go on to a posterior infection and these require an average of eight to twelve weeks from the onset of the complication to accomplish a cure.

In the cases described below at no time was the urethra instrumented or subjected to strong medication while the filtrate was being tried out.

#### CASE REPORTS AND COMMENTS

*Case No. 1:* W. C., twenty-one-year old truckdriver, entered with a history of ex-



posure nine days previously and urethral discharge for four days. Smear showed many gonococci. Two glass test: both cloudy. He was given 0.05 c.c. of filtrate with a "two plus" reaction. One week later condition being the same he was given a similar dose. Seventy-two hours later he appeared with a tremendous swelling of the entire penis and urethra with a phlebitis of the dorsal vein. The patient was confined to bed for a week. He is now slowly recovering.

*Comment*—It did not seem wise to continue with the filtrate in this case.

*Case No. 2:* L. G., twenty-four-year old laborer, admitted to the clinic complaining of a urethral discharge of two days' duration appearing four days after exposure. One year ago had a case of gonorrhea cured in three months. Examination showed a profuse purulent discharge containing gonococci. Two glass test: first, cloudy; second, hazy. He was given 0.05 c.c. of filtrate and started on mild local treatment. A "two-plus" reaction followed. Four days later he developed marked frequency and dysuria. The prostate was enlarged, tense and tender. Both glasses of urine cloudy. Local treatment was discontinued in view of the acute prostatitis. Two days after this an acute right epididymitis developed confining him to bed for three days. Five days after this he was given his second 0.05 c.c. injection of filtrate and a week later a third dose. At this time the epididymitis was twice normal size; there was scant discharge containing no gonococci; the urine was clear with shreds. He has continued to do well with mild local treatment but a course of prostatic massage will certainly be necessary to free him of the prostatitis.

*Comment*—This type of case with a history of a previous infection seen on the second day after the onset of discharge may usually be expected to run a mild uncomplicated course with any type of conservative treatment. The early onset of acute prostatitis and epididymitis, while it cannot definitely be ascribed to the filtrate, would certainly suggest a massive overwhelming of the natural defense mechanism by artificially administered antigen. The resolution of the epididymis was not hastened by the administration of filtrate.

*Case No. 3:* C. S., forty-six-year-old salesman, was first seen with a discharge of four days' duration. The patient was given 0.05 c.c. of filtrate with a "two-plus" reaction. Forty-eight hours later all discharge ceased but there was a marked frequency, dysuria, tenesmus, and swelling of the penis. With Sitz baths and opiates these diminished. One week later he was given a second dose of 0.03 c.c. filtrate with an exacerbation of symptoms confining him to bed for three days. He was given no treatment for the next two weeks and is now recovering with simple local measures.

*Comment*—The early onset of acute prostatitis immediately after the use of filtrate, followed by recrudescence after the second dose leaves little doubt as to its role in producing the complication.

*Case No. 4:* C. J., twenty-nine-year-old student entered with a discharge of three days' duration. Five years ago he had gonorrheal infection lasting six weeks. Smear showed many gonococci. Two glass test: first cloudy, second bloody. He was given 0.1 c.c. filtrate. He seemed to improve rapidly. In one week 0.15 c.c. filtrate was given. Three days after this he developed hematuria, tenesmus, and partial retention. The prostate was a tender throbbing mass filling the rectum. Two days later an acute left epididymitis appeared. He was incapacitated for several weeks. He was eventually cleared up with mild local measures.

*Comment*—Essentially the same as cases two and three.

*Case No. 5:* W. H. entered the clinic complaining of discharge first noted on arising that morning. Exposure five days previous. Examination showed a slight discharge containing gonococci. Urine clear. He was given 0.05 c.c. Corbus-Ferry filtrate with a resulting "three plus" reaction. One week later a second similar dose was given. Following this he did not return to the clinic but when interviewed informally stated that he had no symptoms and was cured.

*Comment*—The data in this case are very meager.

*Case No. 6:* J. B., nineteen-year-old waiter was treated for an acute anterior gonococcal urethritis for one month. He was

given the routine Pelouze treatment. At the end of this time there was a slight discharge containing gonococci. He was given 0.1 c.c. of filtrate and never returned.

A friend reported the "shot made him so sick" he changed doctors.

*Case No. 7:* H. T., a forty-five-year old business man, was first seen with a discharge of two weeks' duration. He had a case of gonorrhea ten years ago lasting one month. Smear positive. Both urines cloudy. He was given 0.5 c.c. of filtrate. In forty-eight hours there was a bloody discharge with tenesmus, frequency, and urethral swelling. This condition lasted a week. After this reaction it was deemed wise to do no further experimenting. With no treatment at all the discharge subsided in six weeks and the residual prostatitis is ready for attack.

*Case No. 8:* T. T., thirty-year old clerk, was seen with a urethral discharge of four hours' duration following exposure five days previously. Smear positive. Two glass test: first, cloudy; second, clear. He was given 0.05 c.c. filtrate and instructed to return for daily treatments.

He failed to return for six weeks using Neo-Silvol at home during this interval. When seen at this time he had a slight discharge containing gonococci. First urine cloudy; second, hazy. Prostate normal size. He was given 0.05 c.c. filtrate. Forty-eight hours later the discharge had stopped but he was voiding blood-tinged urine every fifteen minutes by straining. Temperature 102. Prostate large and tender. Five days later when this had subsided, he was given 0.03 c.c. of filtrate. In twenty-four hours the temperature was 103 and the patient miserable.

Ten days later he had gonococci in the discharge; both urines cloudy; the prostate large and indurated. He is now slowly improving on Pelouze treatment.

*Comment*—The history speaks for itself. The first dose failed to abort the disease. When he returned in six weeks, had low pressure intravesical irrigations and massage been done, he would probably have escaped the incapacitating adnexitis.

*Case No. 9:* F. F., twenty-one-year old Indian school boy, developed an acute gonorrhea and treated himself with bi-daily

injections of Neo-Silvol. In four weeks he considered himself well and took an extended motorcycle tour. Following this he developed an acute posterior urethritis and prostatitis. When this phase was quiescent he was given bi-weekly massage. He was also given injections of filtrate in doses from 0.05 to 0.2 c.c. at weekly intervals for nine doses. After the seventh dose the reaction was "negative." Ten weeks after the onset of the posterior infection he was cured by all the usual tests.

*Comment*—While the filtrate did no harm here, it did not materially hasten the cure.

*Case No. 10:* S.P., a twenty-eight-year old office manager, contracted an acute gonorrhea and was treated for one month by the Pelouze method. At this time he was doing well; there was a slight morning drop containing gonococci. Both urines were clear. He was started on prostatic massage and weekly injections of filtrate in dosage of 0.05 to 0.15 c.c. At the sixth injection the smear was still positive. Forty-eight hours after this dose he developed an acute left epididymitis. The temperature rose to 105 and the patient was in bed ten days. The prostate was large and tender. He is now cured after four months of irrigations and massage without filtrate.

*Comment*—The significant facts here seem to be that even after six injections of filtrate the gonococci was still present and the patient's immunity so low that an epididymitis developed in the absence of trauma.

*Case No. 11:* W. B., a twenty-six-year old laborer presented himself with a chronic gonorrhea of six years' duration. Continuous discharge. Prostatic secretion loaded with pus. Smear positive. He was given ten weekly injections of filtrate in dosage of 0.05 to 0.3 c.c. He had bi-weekly massage. The smears were negative after seven weeks. In twelve weeks he still had a mild prostatitis.

*Comment*—Nothing striking here one way or the other.

*Case No. 12:* T. L., thirty-eight-year old banker, suffered from severe chronic gonorrhea for five years. When first seen he was just recovering from a bilateral epi-



didymitis. He had received all the ordinary forms of treatment, but had never had persistent methodical massage. He was started on irrigations and massage and at the end of two months exhibited slow but steady improvement. The urine was hazy; there was slight morning discharge; the prostate had shrunk in size; smears positive. In order to hasten improvement 0.1 c.c. filtrate was given. In forty-eight hours there was a violent local and general reaction. The entire arm swelled. There was frequent painful urination with bloody discharge. Temperature 103. He was in bed a week. With rest, heat, opiates, and no local treatment he slowly recovered so that one month later massage and irrigations were resumed. After three months of such simple treatment he has only a mild non-specific prostatitis.

*Comment*—In this case there can be little doubt that the filtrate precipitated the acute flare-up and kept the natural defense mechanism in abeyance for some time.

*Case No. 13:* D. C., a thirty-five-year old clerk had a chronic gonorrheal prostatitis of five years duration. Smear positive. Prostatic secretion loaded with pus. He was given intravesical irrigations and bi-weekly massage plus filtrate at seven-day intervals. After two injections of filtrate no more gonococci were found. After five injections there was no discharge. At the end of five months the prostatic secretion was free from pus and there were no symptoms.

*Comment*—In this case it is fair to give the filtrate credit for cleaning up the gonococcic infection. It is noteworthy, however, that an additional four months course of massage was necessary to obtain a clinical cure of the diseased G-U tract.

*Case No. 14:* A. H. T., a thirty-four-year old contractor had a chronic gonorrheal prostatitis of five months duration. He had received no masage. He was given bi-weekly massage plus weekly injections of filtrate in doses of 0.05 to 0.2 c.c. In ten weeks he was cured by all the usual tests.

*Comment*—No material speeding up of the cure here over the use of massage alone.

*Case No. 15:* A. B., a forty-five-year old

negro, had an acute anterior gonorrheal urethritis of five days' duration. He had gonorrhea two years ago for three months. He was given weekly injections of filtrate for two weeks. After the second dose (0.1 c.c.) he developed an acute prostatitis with inability to void. He had to be catheterized for six days. This slowly passed away and in six weeks he was started on prostatic massage with good results.

*Comment*—Here again one sees an untoward extension following filtrate administration.

#### DISCUSSION AND CONCLUSIONS

It had been hoped at the outset to treat a large number of cases with the filtrate so that a statistical comparison could be made with corresponding number treated by the Pelouze procedure which had been our method of choice up to this time. Unfortunately the uniformly poor results in these cases listed above seemed to preclude further experimenting at the present stage of development of the filtrate. No cases of arthritis were subjected to filtrate therapy.

Having tried many of the drugs, vaccines, and endoscopic manipulations advocated for the treatment of gonorrhea in recent years, we have always returned with a sense of greater appreciation to the Pelouze method. In no type of therapy have we ever had so many complications in so short a period of time as when using the filtrate.

In the management of gonorrhea the speediness of cure is of less importance than the avoiding of complications. Nothing is more embarrassing to both patient and physician than to have some untoward progression of this usually benign disease incapacitate the man for his daily occupation. If we cannot always hasten his recovery we can at least be careful not to retard the cure by overwhelming the defense mechanism with powerful biologic agents.

From the theoretical viewpoint it is hard to conceive of any paucity of antigen in the acute anterior urethritis discharging myriads of phagocytized and free organisms in a medium of serum and leucocytes. When the disease is extending to the posterior urethra and adnexa, the process would seem to be due *ipso facto* to an

excess of antigenic substance. In the chronic stages where progress is at a standstill and where vaccines have not previously been administered, small doses of the filtrate may rationally be indicated to stimulate the sluggish anti-infective forces.

For all practical purposes in our hands the Corbus-Ferry filtrate has been unsatisfactory and decidedly inferior to the Pelouze treatment of gonorrhea in the male.

#### SUMMARY

1. The principles of immunity are being more generally recognized in the treatment of gonorrhea.

2. The Corbus-Ferry Filtrate is an exotoxin obtained from the gonococcus; it is used by intracutaneous injection in the treatment of gonorrhea to stimulate resistance.

3. Two large series of cases have been treated by others with good results.

4. Our personal experience with the filtrate in fifteen cases has been unsatisfactory in the extreme.

5. Of many methods tried by us, the Pelouze treatment of gonorrhea in the male has consistently yielded the best results.

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## Points in the Diagnosis of Cancer\*

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*Definition and General Signs.* Before attempting to diagnose cancer, it is well to call to mind a working definition of the disease.

Cancer begins as a single body cell or group of cells, which for some unknown reason begins to grow independently of the other body tissues, and serves no useful purpose.<sup>1</sup>

Before beginning a detailed discussion of the diagnosis of cancer in certain of the commoner locations of the body, a few general signs are given below, that are more or less common to all:

1. Loss of weight.
2. Temperature.
3. Leukocytosis.
4. Bleeding from any body cavity.

5. Pain, usually a late symptom.

6. Cachexia, a late sign.

Any of the above signs may be associated with many other diseases, but we should be cancer minded and suspect every one when these signs occur in our patients. Remember also, that a small percentage of cancer patients exhibit a positive Wasserman. Again, an undiagnosed fever calls for a Widal test, and this is positive occasionally. In one case this was so, and the patient died of carcinoma of the body of the uterus.

Carcinoma of the stomach occurs too often in men, and usually when diagnosed is too late to offer any hope of permanent cure.

Gaither, in his article based upon the study of two hundred forty-five cases, gives the following early diagnostic signs:<sup>2</sup>

\*Read before the Surgical Section, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, May, 1935.



1. Average loss of weight, twenty-nine pounds.
2. Loss of appetite, fifty-five per cent.
3. Pain (Epigastric), seventy-one per cent.
4. Occult blood in stools, seventy-six per cent.
5. Nausea and vomiting, sixty-seven per cent.
6. Anemia, sixty-three per cent.
7. Motor function, obstruction, sixty-four per cent.
8. Achylia, sixty-four per cent.

There are other early diagnostic signs, but those listed above have occurred in the largest per cent of the cases that have come under his observation.

*Loss of Weight:* This is a fairly constant finding and should always be regarded with suspicion.

*Loss of Appetite:* Is variable. One patient with an advanced carcinoma and marked emaciation, volunteered that her appetite was excellent.

*Pain:* May be of every possible kind; sharp, shooting, boring, burning, twisting, cramp-like, aching, and pressing.

*Occult Blood in the Stool:* Is a most valuable finding.

*Nausea and Vomiting:* Occur quite often and are associated, as a rule, with sour stomach.

*Anemia:* Low readings are seen occasionally early, but a large number of cases present color indices near normal.

*Motor Function—Obstruction:* Is noted in a large per cent of cases, with all sorts of irregularities, usually in the region of the pyloric antrum.

*Achylia:* Associated with obstructive x-ray findings is decided evidence toward cancer. Remember, also, to look for Oppler Boas bacilli. If found along with the above findings, a diagnosis of carcinoma of the stomach may be made without fear of contradiction.<sup>3</sup>

#### CARCINOMA OF THE FEMALE BREAST

Carcinoma of the female breast takes its heavy toll yearly, and some of the early diagnostic signs adopted by the American Society for the Control of Cancer are:

1. Beginning fixity of the nipple.
2. Retraction of the nipple on the affected side upward and outward.
3. Bloody discharge from the nipple.
4. Deformity of the breast contour.
5. Presence of a lump in the breast.
6. The lump is hard in consistency.
7. The lump is painless in three-fourths of all cases.
8. Skin dimpling or attachment.
9. Cancer of the breast is opaque by transillumination.
10. Aspiration or punch biopsy may establish the diagnosis.

Transillumination of the breast serves a very useful purpose when in doubt, and should be used by every practitioner and surgeon.<sup>4</sup>

The basic principle of transillumination is the difference in the transmission of light by tissues of different density and composition.

Three types of transmission are recognized:

1. Solid tissue on transillumination causes a shadow of moderate density.
2. Blood casts a very intense shadow of a much greater opacity per unit volume than solid tissue.
3. Clear fluid is translucent, casting no shadow.

#### CARCINOMA OF THE CERVIX UTERI

Carcinoma of the cervix uteri calls for diligent investigation, and every woman is entitled to a pelvic examination, particularly if she has borne children.

The use of Lugol's solution on the mucous membrane of the vagina and cervix may establish in most cases the absence of early cancer. The Lugol solution is applied to the cervix by a cotton swab.<sup>5</sup>

In the normal living tissue of the vagina, the epithelium is stained, in a few seconds, a deep mahogany brown. When the entire area takes this stain, the test is specific for determining the absence of cancer of the portio and vagina.

A white area on the cervix or vagina following Lugol's solution means either:

1. Early carcinoma (edges sharply defined).
2. Erosion or ulcer.
3. Loss of surface epithelium due to recent trauma.
4. Eversion of glandular epithelium of the endocervix (rare).
5. In areas of chronic cervicitis a light brown color blends with the deeply stained normal tissue (precancerous condition).
6. Luetic or tuberculous ulceration.
7. Leucoplakia (white spot disease), precancerous condition.

The diagnosis of carcinoma of the body of the uterus is very difficult and frequently, when finally diagnosed, it is too late.

1. A sound passed into the uterine cavity, returning bloody, should call forth for curettement and microscopic study.<sup>6</sup>
2. Novak's presentation of the suction curette should bring to light more early cases of this kind.<sup>7</sup>

#### CARCINOMA OF THE RECTUM

Brindley states that approximately sixty per cent of all intestinal cancers are in the rectum, usually as a local lesion in the beginning, and amenable to surgical removal with a good prospect of permanent cure. The most frequent signs of the disease are:<sup>8</sup>

1. Blood in stools.
2. Pain.
3. Disturbance of bowel function.

The above three points, associated with general signs, warrant a thorough examination including digital, procto-sigmoidoscopic, and x-ray studies.

No attempt has been made to cover the whole field of diagnosis in this paper. Accordingly, the parts of the body in which cancer occurs most frequently have been reviewed and their early diagnostic points indicated.

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#### Simmonds' Disease (Pituitary Cachexia): Report of Case in Which the Patient Responded to Anterior Pituitary-like Principle of Pregnancy Urine

L. F. Hawkinson, Brainerd, Minn., (Journal A. M. A., July 6, 1935), discusses a fairly typical case of Simmonds' disease. While the diagnosis remains unverified so far as pathologic changes are concerned, the response to treatment with anterior pituitary-like principle of pregnancy urine and ultimate recovery are significantly informative. The syndrome may be caused by transitory functional disorder of the anterior pituitary body as well as by neoplastic involvement. In a girl aged seventeen years, suffering from Simmonds' disease, the treatment consisted of injections of anterior pituitary-like gonadotropic principle of pregnancy urine for four and one-half months and small doses of desiccated thyroid for a short time. Improvement followed the increase in dosage of the gonadotropic substance. The clinical features of the syndrome, together with more recent knowledge of the anterior hypophysis, indicate that the entire anterior hypophysis is involved in Simmonds' disease. It is possible that the hormone activity of the entire anterior lobe of the hypophysis is stimulated by gonadotropic substance. The etiologic factor in the case reported was probably a functional disorder of the anterior lobe. This is suggested by the normal appearance of the sella turcica and the response to therapy.

#### Medicine Among the Zulus

Superstition seems to be the most important ingredient of the Zulu pharmacopeia and may explain the success of many of their remedies, according to Raymond B. Cowles, who concludes his article "Primitive Medicine" in the September Hygeia and discusses the Zulu's faith in charms, countercharms and witchcraft.

The Zulus have a remedy for every ill. They choose their cures from inorganic and organic substances, selecting freely from both plant and animal life. Many of the more potent remedies are supposed to cure not one but many evils, and one, at least, is supposed to be a sovereign remedy with power over every known disease.

#### Tissue Heating by Short Wave Diathermy

Bernard Mortimer and Gertrude Beard, Chicago (Journal A. M. A., August 17, 1935), tested nine new short wave diathermy machines for their ability to heat the tissues of the human thigh. A conventional spark-gap diathermy machine was used for comparison. To date fourteen short wave diathermy machines with wave lengths ranging from six to twenty-five meters have been tested for their ability to heat the tissues of the human thigh. From their results there appears to be no advantage of any one wave length over another for heating purposes.



# Eugenic Sterilization as Applied to Patients in Hospitals for the Insane

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A movement such as this must of necessity have a rather strong argument for its legalization or there will be failure to understand its intentions. It is taken for granted in this thesis that there is strong argument for its adoption and that there are also objections and limitations.

To most people a mental disorder is of itself sufficient reason to warrant almost any means for its suppression in following generations. Eugenics or controlled sterilization of the so-called "carriers" of mental disorders is probably the most drastic step yet taken. Only those types which are believed to have faulty heredity as a likely cause are subjected to the procedure. Environmental factors are not given credit as potential causes of any form of mental disability which might be "carried" from one generation to the next. These factors include birth or other injuries, inflammations, dietary disorders, in fact, any condition not carried by the germ plasm.

For twenty-five years or more different states of our union studied and legislated in an effort to come to a rational basis for handling the question. Thus far we have only reached the stage where wards of the state, *i. e.* those in hospitals, prisons and other eleemosynary institutions have the qualifications necessary for sterilization. Thereby hangs one of the important questions of the whole thing and that is the sterilization, also, of those outside of institutions who might meet the requirements of and need the protection of the procedure. Apparently the state does not feel called upon to decide the question of sterilization until the citizen has been taken into actual custody. There is a much larger number of potential carriers of mental defect outside of hospitals than have been committed. It seems pertinent to ask what of these? But we have to take some rather broad and easily understood basis for a beginning so that commitment

to a hospital or other institution may well indicate the break between the individual's understanding or capabilities and the state's requirements.

Certain types of mind dysfunction have, it seems with considerable grounds for belief, an hereditary basis. Most of the states and foreign countries considering these measures have taken for a working list the following: manic depression insanity, schizophrenia, or dementia praecox, some of the epilepsies, together with the defective mental development cases which include idiocy, imbecility, and moron states. None of these occur, as far as known, in strict Mendelian law succession, in fact, only a very few diseases which lead to mental deterioration seem to follow more or less strictly this law. Huntington's chorea, hemophilia, hereditary familial idiocy and possibly a few others seem to be in this class.

Our own legislatures have been working on a law having in mind the sterilization, not the de-sexing, of certain individuals who are confined in the different institutions of the state. This law, as it applies to the state hospitals, has been declared constitutional. The law as applied to the mental patient has been upheld by the United States Supreme Court in the case of Virginia's sterilization law, which is practically that of the other states. Justice Holmes who wrote the decision says in part: "We have seen more than once that the state may call upon those who already sap the strength of the state for those lesser sacrifices often not felt to be such by those concerned. In order to protect us from being swamped with incompetents, it is better for all the world, instead of waiting to execute degenerate offspring for crime or let them starve from imbecility, if society can prevent those who are manifestly unfit from continuing their kind. The principle that sustains

compulsory vaccination is broad enough to cover cutting the fallopian tubes. Three generations of imbeciles are enough." It was not believed to be constitutional for the penitentiaries because of its punitive nature. The last legislature has attempted to remedy defects in the first law as it applied to prisoners, so that we may expect sooner or later another test case. The objection to the previous law as applied to prisoners convicted for the third time of crimes of certain magnitude were in brief, that the body may not be mutilated as punishment, that it is cruel and unusual punishment, that it is dangerous to life and person, that it violates the Bill of Rights which stipulates that a person may not be punished twice for the same offense, *i. e.* in addition to the prison sentence to have the operation. This last objection is met by the recent law which automatically makes the operation a part of the punishment for those three times convicted of certain crimes.

The recent German edict for sterilization went into effect January 1, 1934. Its provisions are about the same as ours. "Those hereditarily sick may be made unfruitful (sterilized) through surgical intervention when, following the experience of medical science, it may be expected with great probability that their offspring may suffer severe physical or mental inherited damages."

But to revert to the law as applied to the hospitals for the insane and the reasons therefor: first, the prevention of suffering to progeny. It is needless to say that any person destined to spend his time away from his personal interests, and have his activities curtailed through no fault of his own, is not enjoying that fullness of life commensurate with his deserts. Nevertheless social customs must be obeyed and as his activities do not come within normal social bounds he is given into the charge of a specialized branch or arm of society for whatever adjustments may be made. To the extent to which he understands and appreciates the liberties and other offerings of extramural life, just so much does he suffer when deprived of these items. This suffering is at times intense and one is inclined to feel that even to prevent one of these cases is worth the trouble and expense of all the laws.

Second, and very important, is the suffering or anguish of the family deprived of this member of the circle. Certainly it is tragic when a child or even an adult must be taken from a home and given over to the care of strangers, under conditions which only can be guessed at; with the hope for a fair degree of physical comfort but with the fear that the loved one is probably less favored than those left at home. The third, and probably the most urgent reason as seen by the average citizen or taxpayer is that of economy. This idea of economy is applicable not only as it affects the individual but also the rest of the family. It is well known that the patient with pathological hereditary traits not only is expensive to the country on account of his own upkeep, but that it is costly for him to try to keep up a family, because of poor business or social judgment. In other words, the person with faulty mental endowment of whatever origin makes a poor parent. If parents can be kept up to standard it seems reasonable to suppose that their children may be. The poorly equipped parent loses more children by disease and death than the normal parent—many more than would naturally be attributed to faulty environment and parental inefficiency. The incompetent child of parents of so-called "carried" mental defects of course becomes a ward of the state and without the state's having any say in the matter. Most of the cases under consideration show symptoms early in life and become thus practically life long cares upon the taxpayers. Does the taxpayer have any moral or legal right to go so far as to require that a citizen sacrifice his potentialities regarding parenthood for the lowering of taxes? He probably would excepting for the doubtful points raised as follows: the present knowledge of the cause of mental defects is not sufficiently advanced although it is known that a substantial if not a high proportion have one, two, or more relatives with mental diseases or defect. Also the number of patients in hospitals with one or both parents defective is small, and if these parents had been sterilized there would not have been a great difference in number. The mode of transmission of mental defects is also not well enough understood.



A digression here which may be of interest is taken to refer to two statements by the Departmental Committees' Report appearing in the British Medical Journal for January, 1934. One is that defective parents are not abnormally fertile, another is that the first born of parents do not show a high incidence of defectiveness, a rather wide spread idea obtaining to the contrary.

But we must not think of this sterilizing procedure as taking away the prerogatives and limiting the scope of the patient's activities. In fact the opposite is true. Probably the first in importance to the patient is the probability of release from the hospital. Second, we may say, is that it allows a modified family life or home life such as was not possible before, but which may now offer to the patient a relatively high degree of satisfaction. And then, freed of the parental care of children quite a degree of economic productiveness may be expected.

Another advantage to the public is that the number of illegitimate children is lessened, probably not markedly, but surely. It is well known that our largest number of illegitimate births occur among those individuals whose mental endowments are below the average, from whatever cause. They early become the prey of the unscrupulous.

The question may be asked as to the tendency of those so treated to become

more promiscuous in sexual matters. Probably no absolute answer is possible. The general opinions I have seen do not indicate that such is the case. The spread of venereal disease because of increased promiscuousness might be thought of as a serious consequence.

To sum up the qualifications necessary in a candidate for this procedure: mentally, does he have hereditary, recurrent insanity, say manic depressive, or schizophrenic in type? Is he feeble minded but in that degree which would permit a fair amount of economic readjustment if dismissed from the hospital? If he is epileptic may the form of epilepsy be idiopathic in type such as we might reasonably expect to be transmissible? Does he have one of the forms of nervous and mental disturbance definitely known to be carried to progeny? Physically, is the prospect a good surgical risk? If the patient is a woman we have no right to subject her to a greater risk than one or more parturitions would entail. If a man there is still the danger, however slight, of infection of the skin and even of the testes and cord structures. For ordinary discussion the operation in man is of no particular moment. If the above questions are answered in the affirmative then we may reasonably question next if the person is likely to be discharged. Obviously if the patients are to remain in the hospital, there is no point in sterilizing them as they are so already to all intents and purposes.

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## One Answer to State Medicine

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The great agricultural sections of our country are rapidly becoming free of bovine tuberculosis through cooperation of the U. S. Department of Agriculture with the various state departments of agriculture and the people of these states. This is having and will have a decided influence in reduction of the tuberculosis rate in the territory involved. In fact this program has already shown its effect in the nation-wide reduction of tuberculosis; for

without the intelligent application of newer knowledge about this disease, we would have had a marked increase through the depression. This bovine tuberculosis program means particularly a reduction in bone, joint, intestinal and gland tuberculosis. In the past in many sections of the country bovine tuberculosis has accounted for twenty-five per cent of childhood infections. From this war on bovine infections we will see fewer and fewer crooked

spines and stiff knees among children. It will effectively lead the way for the Government program for crippled children which also will be a Federal, state and people's co-operative effort for handicapped children.

This great program against bovine tuberculosis has been made possible through use of the tuberculin test. By this means the presence of tuberculous infection can be determined long before there is any outward evidence of disease. These live tubercle bacilli are usually found in glands of the internal organs of cattle. Of course, this condition is particularly dangerous in milk cows where the milk from one infected cow, mixed with that of all others of the herd, makes it all equally dangerous. The cattle that react to the tuberculin test are marked and slaughtered. The tuberculous condition is then confirmed by post mortem. Through this means the veterinary profession has established the fact that the bovine tuberculin test is almost one hundred per cent accurate. In human beings confirmation is made by the x-ray. From the inception of this program veterinarians have co-operated with Government and people. Of course it has been profitable for them to do so, for here was a big job that nobody else could do. This is what may be termed as benevolent selfishness, for the American public has benefitted to the extent of billions of dollars besides the saving of thousands of children and the prevention of misery, suffering and handicaps for hundreds of thousands of others.

Since the public has observed the results in this bovine tuberculosis campaign they are prepared to co-operate more actively in prevention and control of the human type of tuberculosis, which is spread largely through home contacts with open cases. In recent research of the National Tuberculosis Association new information has been obtained about tuberculosis, especially in childhood infections. This has been aided greatly through improvement of the tuberculin test. This test is just as accurate in finding children with tubercle bacilli as in cattle. Also, as in cattle, many of those who appear to be in the best of health react to the test. It means they are or have been exposed to

tuberculosis, usually in the home. Formerly doctors said the reaction "doesn't mean anything" when the child showed no evidence of illness. But the x-ray has changed that. Many show distinct evidence that something is wrong even though not much evidence is shown in many others. But in one group of one thousand children of ages around ten to twelve tested by Dr. Myers of the University of Minnesota and observed over a period of ten years, it was found that among children who reacted to the tuberculin test there were ten times as many developed active tuberculosis as among those who did not react. So we see the reaction does mean something.

The encouraging feature of the matter is that all children who react may be saved from active tuberculosis. It is only necessary to inaugurate an offensive campaign. That means find out how serious the infection, by the x-ray. Find where the bacilli are coming from and stop the exposure. (A reaction to the tuberculin test never occurs except where there are live tubercle bacilli somewhere in the body.) If the child has any defects whatever, correct them; remove bad tonsils and correct other abnormal nose and throat conditions. Repair any bad teeth. Build up weight, if need be. See that there is plenty of sleep and wholesome food. The test should be repeated at six months' intervals.

This is a childhood program that fits right into the practice of medicine. It is different from treatment of active tuberculosis in adults which pauperizes most of the victims. For many of these children there are parents to pay the bills. It is not too expensive for the average family for rarely is it necessary for infected children to stay in bed, merely a few hours extra sleep each day. Most of them may attend school for they are not dangerous to others unless open cases. The medical profession has an opportunity to render a great public service by active co-operation in the war on tuberculosis among children. This will be profitable to physicians as the bovine tuberculosis campaign has been profitable to veterinarians. Also, in this work among children, as in the case of the bovine campaign, the public will profit to the extent of billions of dollars, thousands of lives saved and the pre-



vention of suffering among hundreds of thousands.

The best way for a community to make progress in childhood tuberculosis campaigns is through offering the tuberculin tests free in school survey clinics. This is best because so many are found who do not know they have ever been in contact with tuberculosis, and would never go to a doctor. This is particularly true in communities with large negro population, for servants often infect children; and the tuberculosis rate among negroes is three times that among whites. Then it awakens to action so many whose children have been exposed and who have failed to realize the danger or who hope their children have escaped infection even though they have been exposed. The practicing physician's big job is the follow-up and routine care over many years of those who are found to react. Of course the private physician should make repeat tests each six months, as a part of his observation and care to prevent his child patient from developing tuberculosis.\*

The people are learning about childhood tuberculous infection, and that if proper attention is given these infected children before active illness begins they may be protected. We are doing all we can to see that the public is informed. We are referring those children whom we find to react to the tuberculin test in our surveys, to the family physician. Most of these are pre-clinical cases but they need protective care and supervision. When a physician tells the parents of these children, or young high school or college students, there is nothing the matter because they look well, he is giving them a false sense of security. The fact that the stethoscope reveals nothing does not change the picture; it is usually lung-gland infection and there is nothing unusual to be heard. The x-ray will usually reveal something abnormal, and give information on how

much treatment is needed. Even where the x-ray reveals nothing in a child or youth who reacts to the tuberculin test, observation and repeat tests should be made at six months' intervals. Defects and bad health practices should be corrected. In all cases look for the source of infection, for if contact continues all the physician does may be in vain. An inexpensive way to locate possible unrecognized cases in the home is to give the tuberculin test to all. Then look more thoroughly into the worst reactors, if any.

*Summary:* Tuberculosis can soon be stamped out by attention to infected children. It is a job the medical profession may profitably do. We are referring to the family doctor as many of these cases as we can reach. We are giving the public all the information we can, and to the families of all reactors we send pamphlets telling what it means. These people go to their physicians for professional advice. Hearty co-operation here is an opportunity for the medical profession and will assure success to the program. This will be one answer to State medicine.

#### Analysis of Apparent Increase in Heart Disease

Alfred E. Cohn, New York (Journal A. M. A., November 2, 1935), demonstrates, by a set of curves, the net increase in circulatory diseases after the age of sixty. The figures given describe the condition in the U. S. registration area of 1900. They may be representative of the country as a whole, but, seeing how closely diseases of all sorts are dependent on the environment, the climate in the West and South may actually require a different description of the course of cardiac disease for these states. Beginning with the age of forty there has been a rise in the death rate from chronic cardiac diseases, decade by decade, from 1900 to 1930. From his study the author infers that there has been a rise, but only a slight one, in the death rate from circulatory diseases. The rise is due apparently to savings from deaths resulting from infectious diseases in the very decades in which the slight rise in the circulatory disease has occurred.

#### Phagocytosis

Elie Metchnikoff, a pioneer biologist and philosophical idealist, was born in 1845. Adolph Beilin tells of his subsequent career in a brief sketch appearing in the December Hygeia.

It was after many years of intensive experimentation on animals of every classification and species that Metchnikoff published his first observations on "Intracellular Digestion in Lower Animals" in 1881, thus establishing his great biologic discovery of phagocytosis. Metchnikoff's studies and experiments on various groups of animals contributed much toward the foundation of comparative embryology. His discovery of phagocytosis was derived from research on the ameba and other unicellular protozoa.

\*On request the Oklahoma Tuberculosis and Health Association will furnish any physician with Old Tuberculin for re-test of these patients who call, or for others. With this we will send "Diagnostic Standards," new medical publication of the National Tuberculosis Association, and other literature on childhood tuberculosis. The former has sixteen pages devoted to childhood tuberculosis and the tuberculin test. The best tuberculin—the last word—is the new P. P. D. (Purified Protein Derivative), perfected by the National Tuberculosis Association. This is in two strengths and comes in tablet form with a diluent. It keeps indefinitely until dissolved. It is too expensive for us to furnish free, however. It is put out by Sharpe & Dohme, and Parke Davis Company.

# THE JOURNAL

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### EDITORIAL

#### THE KANSAS MEDICAL SOCIETY PLAN

The plan for provision of medical attention to work relief and direct relief families described in the following summary and attached sample contracts has been devised by the officers and the Medical Economics Committee of the Society after a six months investigation and study of available plans for this purpose. It is submitted for consideration by the county medical societies with the thought in mind that although certain imperfections are undoubtedly contained, there are also elements of free choice of physician, continuation of the patient-physician relation, recognition of the county medical society as an official health agency, ability for self-financing of medical obligations, and

recompense for service on a near cost basis which are both ethically and economically sound and which will enable a safe beginning for experience toward a better method in the future:

##### 1. General Provisions.

1. The county medical society would become an official agency for provision of medical relief.

2. Direct relief clients (county dependents) and work relief clients (federal clients) would be offered an opportunity to secure medical attention for an amount of \$1.00 per month per family which amount would be regularly paid each month whether or not services are utilized.

3. Members of the county medical society desiring to participate in the plan would furnish attention on a free choice of physician basis.

4. As nearly as possible, complete and adequate medical attention would be provided. However, hospitalization, medicines, and certain other services would not be included, and no obligation would exist for performance of services not reasonably possible or for which adequate facilities are not available.

5. Monthly payments would be made payable to the county medical society, and distribution among physicians would be by any method desired.

6. All applicants for service would be subject to approval by the county medical society, and a privilege would exist for withdrawal of the plan from non-cooperative relief clients. Individual physicians would have a right to accept, refuse, or discontinue attention to particular participating patients in the same manner as in their usual practice.

7. Inasmuch as direct relief clients have no incomes with which to finance the plan for themselves, a contract would be entered into between the county medical society and the county commissioners for care of these persons. Herein the county would agree to pay the amount of \$1.00 per month for each direct relief client, or family, included within the plan.

8. Since work relief clients do have incomes (\$32.00 to \$79.00 per month under



WPA) sufficient to finance the plan for themselves, they would be expected to make their own monthly payments. However, no contract with the county would be necessary for this purpose, and instead individual agreements would be made through the medium of medical cards which would be mailed or otherwise distributed to these clients with a full explanation of the plan. Payments hereunder would be deposited by work relief clients to the credit of the county medical society in banks within the county, and depository banks would receipt the cards at the time of the payment for purposes of identifying paid participants.

9. Druggists and hospitals would be asked to cooperate in furnishing their services to relief clients upon a cost basis. Several good arguments would be possible for this purpose: They owe the same duty of assistance as is owed by the medical profession, and they should be interested in the elements of rehabilitation afforded by the plan. Where this cooperation does not enable provision of necessary incidentals, the county would be asked to provide extra work or other means of assistance.

10. Both the direct relief and work relief agreements would be cancellable upon a desired notice, thereby extending safety to all parties in the transaction.

## *II. Believed Advantages.*

1. A foremost advantage of the plan is thought to be its ability for rehabilitation. Instead of twenty per cent of the public being encouraged in a feeling that medical service is a charitable relation or a governmental obligation, there is opportunity for the greater number of this group to make its own arrangements and to pay its own way. Even though there is probably some necessity for public subsidization of usual paupers, the above result would seem to offer a better method insofar as the temporary indigent are concerned for both the public and the profession.

2. There are other tendencies away from socialization. All elements are identical to the present system of individualistic practice with the single exception of a necessary alteration in method and amount of compensation.

3. There is a substantial free choice of physician.

4. The patient-physician relation is maintained without intervention of case workers or other third parties for audit and supervisory purposes.

5. Medical relief is systematized in accordance with medical ideals and ethics, and supervised by medical men without governmental subordination.

6. Since indigent care cannot be expected to provide a profitable practice, the amount selected for the monthly charge is necessarily low; yet volume and distribution of risk would tend to make possible a near cost price for physician's services.

## *III. Miscellaneous Information.*

1. *Voluntary Payment:* Although participation is voluntary insofar as work relief clients are concerned, several experiments have indicated that no serious difficulties would be experienced from this cause. However, an educational campaign would be of assistance for explanation and emphasis that the plan is offered only for benefit of relief clients, that it extends a near cost price, that it offers an easy and practical means for securing medical attention, and that it aids in avoiding other unsatisfactory methods and conditions.

2. *Malingering:* A possibility is recognized that certain individuals would attempt to take advantage of the opportunity for service. It is believed that a similar educational process could offset this difficulty. As a last resort particular clients could be denied further participation..

3. *Applicants Accepted:* The plan is intended only for use by WPA and PWA employees, Resettlement clients, direct relief dependents, and others whom the county medical society might desire to include who are actually receiving county and federal relief assistance. It is not intended to be applicable to persons with inadequate private incomes, since additional studies are being made on behalf of the latter group and as other plans are contemplated for their use. Official lists of bona fide relief clients may be obtained from the County Poor Commissioner.

4. *Distribution of Payment:* Payments might be distributed among participating

physicians by equal dividend, by a unit system wherein different kinds and amounts of service are compensated on a pro-rata basis, or by other methods desired by the county medical society.

5. *Traumatic Injuries*: Announcement has been made that WPA workers will be entitled to governmental workmen's compensation for injuries received in the course of project employment. As this represents no difference from similar payments received under state laws, it is thought these injuries should be excepted from the service offered.

6. *Free Choice of Physician*: By reason the plan is medical in scope, only doctors of medicine could extend service. Kansas laws governing the practice of medicine and surgery and rulings of relief officials might be utilized for settlement of misunderstandings on this point. Also, opportunities for dishonest service would seem to make advisable inclusion of only physicians of ethical standing. In most instances this would mean only the members of the county medical society, but where exceptions occur it is thought an effort should be made to secure the affiliation of all eligible and desired non-members.

7. *Banking Arrangements*: Suggestion has been made by some boards of directors of banks in Oklahoma that local arrangements be completed in each county through the county banker's organizations for the handling of monthly payments in banks. Although a small charge may be made for this service, it is believed most bankers would be willing to cooperate for the good to be derived to the community.

*Comment*: If this would apply in your county it might be of service and is being published without the endorsement of the Council and with no recommendation from the Editor.

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The Secretary-Editor attended the meeting of Secretaries and Editors, held in Chicago, November 15 and 16, and heard numerous subjects of particular interest discussed.

The contacts with the officers of the American Medical Association were most

pleasant and among other things accomplished was specific arrangement with the President-Elect of the A. M. A., Dr. James Tate Mason, to attend our meeting at Enid and he will appear on the program the morning of May 6th.

Among many subjects discussed the above Kansas Plan for Medical Care received both favorable and unfavorable comment, it appearing to some that there was danger in this plan as it might be extended to include the low income group and might be hard to discontinue at the expiration of Federal and State Relief. There was favorable comment in that it would bring to the physicians of the respective counties some income from the people who at this time are receiving services without remuneration to the medical profession. It was also thought that this plan would teach the participants that they must again accept the responsibility of paying for medical care.

#### Fight Cancer With Knowledge

The American Society for the Control of Cancer (1250 Sixth Avenue, New York City), distributes educational matter on cancer subjects through State Medical Societies. Available in Oklahoma, from address given, we list the following:

SLIDES—"Tumors of the Breast" (medical), Dr. E. S. Lain.

FILM STRIPS (and Film Projectors)—"Carcinoma of the Breast" (medical); "Tumors of the Uterus" (medical); "Fight Cancer With Knowledge" (for women's clubs, luncheon clubs, and other lay audiences); "Cancer, Its Life History and Practical Measures for Its Control" (for university students, nurses, etc.), Dr. E. S. Lain and Mr. L. W. Kibler.

FILM AND PROJECTOR (movie), eight minute Canti film, for medical profession, medical students, nurses, etc. Mr. L. W. Kibler.

The Cancer Committee of the Oklahoma State Medical Society: Dr. Wendell Long, Chairman, 119 North Broadway, Oklahoma City; Dr. E. S. Lain, 119 North Broadway, Oklahoma City; Dr. A. H. Bungardt, Cordell.

Address Mr. L. W. Kibler at Norman, University of Oklahoma.

#### Editorial Notes—Personal and General

DR. and MRS. Walter HARDY, Ardmore, have returned from California where Dr. Hardy attended the Clinical Congress of American College of Surgeons.

DR. GUY CLARK, Tishomingo, is reported improved after a short illness.

DR. HUGH JETER, Oklahoma City, has resigned his position as medical director and assistant superintendent of Oklahoma University Hos-



pital, in order to give more time to his private practice. Dr. Jeter will be succeeded by Dr. E. T. Olsen of Detroit.

DR. I. V. HARDY, Medford, has returned from Rochester, Minnesota, where he attended the clinics.

DR. L. S. WILLOUR, McAlester, has returned from Chicago and St. Louis where he attended the Annual Conference of Secretaries and the Southern Medical Association.

DRS. V. H. BARTON, McAlester, W. C. WAIT, Clinton, and CHAS. M. PEARCE, Oklahoma City, have returned from a bird hunt some thirty miles north of McAlester.

DR. A. B. STEPHENS, Seminole, has returned from Rochester, Minnesota, where he attended a fourteen-day course at the Mayo Clinic.

DR. JAMES STEVENSON, Tulsa, addressed the Craig County Medical Society November 12th on the subject of "Some Common Affections of the Hands and Feet."

DR. BEN H. COOLEY, Norman, addressed the Cleveland County Medical Society November 14th on the subject of "The Peripheral Vascular Diseases."

DR. RALPH V. SMITH, formerly 607 Medical Arts Building, Tulsa, announces his removal to Route No. 1, Box 46, Salina, Oklahoma.

DR. H. W. FORD, 417 Oklahoma Natural Gas Building, Tulsa, announces that DR. J. D. SHIPP, also of Tulsa, is now associated with him, limiting his practice to surgery and obstetrics.

DR. and MRS. CLIFFORD A. TRAVERSE, Alva, announce the birth of a son, Clifford Austin, Jr., November 23rd.

### *News Notes of Woman's Auxiliary*

The Woman's Auxiliary to the Oklahoma County Medical Society entertained the wives of visiting doctors attending the recent Oklahoma City Clinical Society.

A luncheon and style show at the Skirvin Hotel on November 5 with local doctors' wives modeling featured the entertaining. More than two hundred attended this affair.

The following afternoon a tea was given in the home of Dr. and Mrs. Forrest M. Lingenfelter. Those receiving during the afternoon were Mrs. Lingenfelter Mrs. Carroll M. Pounders Mrs. C. P. Bondurant, Mrs. Robert U. Patterson and Mrs. Earl D. McBride. More than a hundred called during the afternoon.

Forty-four garments for the Crippled Children's Hospital were finished at the last meeting of the Oklahoma County Auxiliary meeting on October 11. This group sews for the hospital one day each month.

Garfield County Auxiliary was organized at a meeting in Enid on October 14 by the president of the State Auxiliary, Mrs. Carroll M. Pounders;

State Organizer, Mrs. C. R. Roundtree; Mrs. F. M. Cooper, Mrs. Earl D. McBride, and Mrs. C. P. Bondurant.

Officers elected were: President, Mrs. F. A. Hudson; Vice-President, Mrs. R. C. Baker; Secretary, Mrs. Bruce Hinson; and Treasurer, Mrs. D. D. Roberts.

Cleveland County Auxiliary held their monthly clinic at Norman on November 14. A social meeting followed.

### **Southeastern Oklahoma Medical Association**

Southeastern Oklahoma Medical Association held their semi-annual meeting at McAlester, Oklahoma, Tuesday, December 10, 1935. All sessions of the Association convened at the First Presbyterian Church. The following program was presented:

Scientific Program—Symposium on Fractures:  
Fractures and Injuries of the Head—Dr. J. F. Park, McAlester.

Fractures of the Elbow and Forearm—Dr. O. J. Colwick, Durant.

Fractures of the Pelvis and Lower Extremities—Dr. L. S. Willour, McAlester.

Discussion opened by Dr. G. A. Kilpatrick, McAlester.

Luncheon 12:30 p. m., First Presbyterian Church  
Program resumed 1:30 p. m.

Invocation—Rev. Doctor S. R. Braden, Pastor, First Presbyterian Church, McAlester.

Welcome Address—Dr. T. H. McCarley, McAlester.

Response to Welcome Address—Dr. A. J. Wells, Calera.

President's Annual Address—Dr. F. P. Baker, Tahleah.

Coronary Diseases—Dr. Roy L. Cochran, Caddo.  
New Public Health Progress in Epidemiology—Dr. Rush L. Wright, Poteau.

Subject Unannounced—Dr. W. L. Taylor, Holdenville.

The X-Ray in Diagnosis and Treatment—Dr. Edward D. Greenberger, McAlester.

Dr. F. P. Baker, of Tahleah, is president, and Dr. John A. Haynie, of Durant, is Secretary-Treasurer.

### **Tuberculosis Abstracts Available**

The National Tuberculosis Association publishes monthly a two-page review for physicians. The Oklahoma Tuberculosis Health Association, 22 N. W. Sixth Street, Oklahoma City, Oklahoma, has ordered 500 of these abstracts monthly, and these will be mailed without charge to physicians making application for them. Drop us a card if you want your name on our mailing list.

CARL PUCKETT, M.D.,  
Managing Director.

### **DR. MARION M. ROLAND**

As this issue of The Journal goes to press we are informed of the death of Dr. Marion M. Roland, Oklahoma City. Inasmuch as our forms are set up, only mention can be made with complete obituary appearing in the January issue of The Journal.

### Muskogee Academy of Medicine

Muskogee Academy of Medicine held their fourth meeting on December 4th, 1935, at Hotel Severs, presenting the following program:

Clinics—Oklahoma Baptist Hospital.

Dermatology and Syphilology—C. C. Dennie, Kansas City.

Internal Medicine—P. T. Bohan, Kansas City.

Gynecology—John C. Burch, Nashville, Tenn.

Luncheon, C. E. White, presiding—Severs Hotel.

Address—"Medicine in South America"—C. C. Dennie.

Scientific Session, Dr. A. N. Earnest, presiding—Severs Hotel.

Differential Diagnosis of Uterine Bleeding—John C. Burch. Introduced by Dr. W. C. Vernon, Okmulgee.

Management of Heart Failure—P. T. Bohan. Introduced by Dr. J. S. Allison, Tahlequah.

Subject unannounced—C. C. Dennie. Introduced by Dr. M. O. Nelson, Tulsa.

Dinner, Dr. C. V. Rice presiding—Severs Hotel.

Address—Dr. John C. Burch.

Address—"Coronary Disease"—Dr. P. T. Bohan.

Scientific Session—Severs Hotel:

Subject unannounced—C. C. Dennie. Introduced by Dr. Goldstein, Fort Smith.

"The Nervous Woman"—Dr. P. T. Bohan. Introduced by Dr. W. A. Tolleson, Eufaula.

Practical Applications of Gynecology and Endocrinology—John C. Burch. Introduced by Dr. E. A. Aisenstadt, Picher.

Guest speakers were Dr. P. T. Bohan, Professor of Clinical Medicine, Kansas University; Dr. Chas. C. Dennie, Associate Professor Dermatology, Kansas University; Dr. John C. Burch, Associate Professor Clinical Gynecology, Vanderbilt University.

### Scientific Exhibit—Kansas City Session American Medical Association

The Scientific Exhibit at the Kansas City Session of the American Medical Association will be held in the Municipal Auditorium in conjunction with the other activities of the Association, May 11-15, 1936. All applicants for space in the Scientific Exhibit must fill out regular application blank.

The exhibit will cover a wide variety of subjects, including the basic medical sciences as well as the various specialties in medicine. The various sections of the Scientific Assembly have appointed section representatives, who will correlate the section exhibits, as far as possible, with the papers read at the section sessions.

Applications for the Scientific Exhibit close on January 27, 1936. Assignments of space will be made about February 24, 1936.

Further information may be obtained from Thomas G. Hull, Director, Scientific Exhibit, 535 North Dearborn Street, Chicago, Illinois.

### The Heart in Hypertension

George Fahr, Minneapolis (Journal A. M. A., November 2, 1935), points out that fifty-five per cent of the appalling death rate consequent to essential hypertension is due to heart failure. Moreover, heart failure of some degree is nearly always present in cases of essential hypertension in which death occurs in uremia or from apoplexy

or cerebral softening. The heart in hypertension shows left ventricular hypertrophy and dilatation with varying grades of replacement scarring in the muscle. There is some coronary arteriosclerosis present in ninety per cent of the cases. The coronary narrowing is responsible for the scars found in the heart muscle. A very high percentage of patients with angina pectoris and coronary arteriosclerosis have high blood pressure complicating the cardiac picture. Hypertension and coronary arteriosclerosis are so intimately and frequently associated that they should be considered together and the term "hypertensive heart disease" or "hypertension heart" should connote coronary involvement. What has been termed "chronic myocarditis" is usually the result of high blood pressure and coronary artery disease and not the result of infection. Heart failure in the clinical sense does not develop in hypertension until many years (from ten to twelve) have passed unless the coronary disease accompanying the high blood pressure becomes very severe or unless some other cardiac complication is present. Many patients with hypertension live fifteen years or more and finally die of one of the other consequences of hypertension, though some degree of heart failure may have been present previously or at the time of death.

### Syphilis and Pregnancy: Clinical Study of 2,150 Cases: Chairman's Address

The women in James R. McCord's, Atlanta, Ga., (Journal A. M. A., July 13, 1935), study were all Negroes and each had a strongly positive blood Wassermann reaction during some period of pregnancy. The study shows, indisputably, the ravages of the disease on pregnancy, the wonderful results of efficient antepartum antisyphilitic therapy and the maternal safety of such treatment. He forms the following conclusions: 1. Pregnancy does not affect the reliability of the Wassermann reaction. 2. This test should be a routine part of antepartum care. 3. Regardless of the activity of the disease, sufficient antepartum antisyphilitic treatment assures the woman a syphilis-free baby in 95 per cent of the cases. 4. The best results will be obtained with ten or more treatments. 5. Treatment should be mild but continuous and should not be controlled by the Wassermann reaction. 6. The concurrent use of arsenic and a heavy metal has worked well. 7. Such therapy seems to be safe for the mother. 8. In the majority of cases, a strongly positive cord Wassermann test, properly done, means that the baby has congenital syphilis. A negative cord Wassermann reaction is of little value in the diagnosis of congenital syphilis. 9. The characteristic picture of osteochondritis of the long bones is pathognomonic of congenital syphilis. 10. There seems to be no condition in medicine that returns such huge dividends in life and health with such small output of energy and money as that seen in the prevention of congenital syphilis.

### Thyrotoxicosis

Two of the most important observations in the study of the thyroid gland are: (1) Toxic goiter, enlargement of the thyroid gland with excessive or abnormal function, if neglected or improperly treated, may give rise to a heart breakdown or serious stomach and intestinal trouble. (2) Excessive or abnormal function of the thyroid gland leading to such a breakdown may occur without any enlargement of the gland.

Dr. Solomon Ginsburg continues his discussion of goiter treatment in "Masked 'Hyperthyroidism' or Thyrotoxicosis" in the December Hygeia.



The Therapy of Cook County Hospital:  
Puerperal Sepsis

In his discussion of the therapy of puerperal sepsis, as outlined by A. F. Lash, Bernard Fantus, Chicago, (Journal A. M. A., July 6, 1935), states that in this infection of the uterus and its surrounding structures occurring after the termination of a pregnancy, the available resources of prevention are a great deal better than the means of cure. Under prophylaxis, antepartum and obstetric care, prevention of the lowering of resistance, care of the bladder and intestine, the avoidance of unnecessary trauma and the prevention of excessive hemorrhage are considered. Patients suffering from puerperal sepsis should be transferred at once to the special service and isolated there. A careful general physical examination and a blood culture should be made, the lochia examined, and a culture taken from the vaginal discharge just within the introitus. It is only if the vaginal culture is indeterminate that a culture may be taken from the cervix, with the exercise of the utmost gentleness. Rest must be general as well as local. Local rest to the pelvic structure is procured by the uncovered icebag applied to the suprapubic region and by absolute avoidance of internal vaginal or uterine douches and of enemas. When abdominal distention and tenderness set in, the icebag is replaced by large hot stupes over the abdomen. These must not be so heavy as to make the patient uncomfortable. A rectal tube may help in allowing gas to escape. The appearance of the symptoms of ileus call for the management of that condition. Gastric lavage or the Levine tube are used for vomiting. Therapy for fever consists most eminently of good nursing. Bedclothes must be changed as often as necessary because of excessive perspiration. When the patient is seriously sick her fluid balance should be maintained by forcing liquids, particularly fruit juices by mouth; and only if this channel becomes unavailable should parenteral administration of fluid be resorted to. The importance of maintaining the stock of sodium chloride in the patient's system must not be overlooked. If acidosis is present or threatened carbohydrate administration is demanded. Blood

transfusion is valuable not only if anemia is present but also as a stimulant to the immunity reactions. Usually from 300 to 350 cc. of whole blood is given every three or four days. Specific antiserum should be resorted to at the earliest possible moment, as soon as the bacteriologic diagnosis can be made. Vaccines may be of value in the subacute and chronic stages of streptococcal infection. Arsphenamine is indicated in rather small therapeutic dosage in the nonspecific spirochetal mixed infections. Surgery has a narrow field of usefulness in the treatment of puerperal sepsis. A posterior colpotomy is indicated for pelvic abscess. Hysterectomy is occasionally indicated for abscess of the uterus wall. Drainage through the abdominal wall as well as through the vagina may be of great aid in an ascending peritonitis. The ligation of veins in thrombo-phlebitic processes has not been successful, the usual conservative measures having been found more effective. In the presence of puerperal sepsis, curettement is dangerous.

Infectious Mononucleosis: Part II.  
Hematologic Studies

Hal Downey and Joseph Stasney, Minneapolis (Journal A. M. A., Sept. 7, 1935), observed that examination of the biopsy material from the lymph nodes of patients with infectious mononucleosis shows that the hyperplasia of lymphocytes is not as extensive or as uniform as in cases of lymphatic leukemia. The hyperplasia of the reticulum is due to swelling and proliferation of groups or reticular cells, giving sections a spotty and nodular appearance identical with that described by Nishii after staphylococcal reinfections. The changes in the nodes, together with the atypical structure of the lymphocytes and the increase in their number, indicate that the disease is due to infection with some organism or virus which has a very specific stimulating effect on the lymphocytes and reticulum and a depressing effect on the granulocytic system. The blood picture is very characteristic but not absolutely specific, as there are some other types of infection which occasionally show the same blood picture.

Report of Examination for Licenses to Practice Medicine

Examination held at Biltmore Hotel, Oklahoma City, October 21, 1935.  
The following applicants passed:

NAME	Year of Birth	Place of Birth	School of Graduation	Year of Graduation	Permanent or Present Address
York, Joseph Ferrell	1907	Alco, Arkansas	University of Texas	1931	Madill, Okla.
Triplett, Henry Hall	1906	Kit, Kentucky	University of Tenn.	1933	Amber, Okla.
Richardson, Wm. Addison	1905	E. Baldwin, Maine	Col. Med. Evangelists	1934	Broken Arrow, Okla.
Paulson, Geo. A.	1886	Davenport, Iowa	University of Minn.	1923	Ada, Okla.
Kennedy, Virgil Newton	1905	Kansas City, Kansas	University of Kansas	1932	Newkirk, Okla.
Grow, Max Harrison	1905	Loup City, Nebr.	University of Nebr.	1932	Stillwater, Okla.
Alford, Othar Thurston	1899	Ashville, Ala.	University of Tenn.	1929	Seiling, Okla.
Alexander, Robert Lin	1910	Okmulgee, Okla.	University of Tenn.	1934	Okmulgee, Okla.
Moon, Edward Crawford (Col.)	1898	Fallis, Okla.	Meharry Medical	1925	Oklahoma City, Okla.
Hollis, Lynn Estil	1907	Hollis, Okla.	University of Texas	1933	Hollis, Okla.
Geerlings, Lewis J.	1907	Grand Rapids, Mich.	Rush Med. Chicago	1933	Ficher, Okla.
Downing, Gerald Glenn	1908	Wichita Falls, Texas	Baylor University	1933	Marlow, Okla.
Kahn, Bernard I.	1907	Ardmore, Okla.	University of Okla.	1934	Spokane, Wash.
Coker, John K., Jr.	1907	Mt. View, Okla.	University of Okla.	1934	San Diego, Calif.
Clark, Ben P.	1910	Laughton, Kansas	University of Okla.	1934	Chattanooga, Tenn.
Keller, Grape F.	1892	Fort Worth, Texas	University of Okla.	1934	Oklahoma City, Okla.
Maupin, Clinton S.	1908	Waurika, Okla.	University of Okla.	1934	Oklahoma City, Okla.
Evans, Robert Erle	1909	Hugo, Okla.	University of Okla.	1934	Hugo, Okla.
Williams, Guy Herson	1908	Norman, Okla.	University of Okla.	1934	Norman, Okla.
The following doctors were given duplicate licenses because of loss of original certificates:					
Bacon, Otis Guy	1880	Washington County, Tennessee	Univ. Louisville	1907	Frederick, Okla.
Taylor, Wm. Merritt	1872	Oldham County, Ky.	Bellevue Hospital Medical College	1898	Oklahoma City, Okla

# ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

## INTERNAL MEDICINE

Edited by C. E. Bradley, M.D., Medical Arts Building,  
Tulsa; Hugh Jeter, M.D., 1200 North Walker,  
Oklahoma City

By C. E. BRADLEY, M.D.

**The Reduction of Diphtheria Following Three Doses of Toxoid: Further Observations.** N. E. McKinnon, M.B., and Mary A. Ross, Ph.D., Toronto, Ont. J. A. M. A., Vol. 105, No. 17, October 26, 1935, Pages 1325-29.

The authors present a summary of a study of diphtheria immunization in the city of Toronto in which children were immunized by the department of public health during the period from 1926 to 1930. Their results indicate definitely the inadequacy of one dose of toxoid, the great improvement in the degree of immunity when two doses of the toxoid are given (seventy-four per cent reduction) and the great advantage of giving three doses of the toxoid (ninety per cent reduction).

Between 1927 and 1932, 46,038 children were given three doses of toxoid; studies with controls and school mates, both immunized and non-immunized indicated that there was a ninety-one per cent reduction in the number of cases of diphtheria and that there were no deaths. This large number of cases is a fair indication of the efficiency of immunization with three doses of the toxoid under the conditions of high prevalence of diphtheria prevailing at that time. Their studies indicated that the greatest degree of immunity prevailed in the year the toxoid was given, but that it was between eighty-five and ninety per cent efficient over a period of from four to five years.

Positive diagnosis of diphtheria by culture and virulence tests was demonstrated in their series of immunized children who were Schick negative; so it must be borne in mind that the Schick test is not an absolutely positive test for an individual's immunity. However, those cases in which diphtheria occurred even though the Schick test was negative were very mild, and yielded readily to treatment.

In 1926 in Toronto there were ninety deaths out of one thousand cases of diphtheria or a mortality rate of 16.22 per hundred thousand; this is approximately the rate for the previous thirty years. In 1927 the mortality rate was twenty per cent; at that time a campaign was initiated against the disease, and mass immunization was offered in the schools. In 1934, in the same city with a population of 630,000, there were eighteen cases, and for a period of fifteen months, January, 1934, to March, 1935, there was not one death from diphtheria. Previous to the immunization campaign diphtheria had claimed a greater number of deaths in children from two to fourteen years of age than any other disease. Since the morbidity and mortality rate had remained unaltered for almost thirty years previous to the immunization campaign it seems fair to attribute the great decrease

in the number of cases and deaths from the disease to immunization.

The fact that the authors' studies show that although the number of cases examined for diphtheria by swab cultures was greatly increased during the immunization campaign, the number of positive cultures was consistently decreased, suggests that the elimination of cases through immunization controls the infecting organism and decreases the possibility of carriers.

Note: Two years ago the abstractor condemned one dose of toxoid, and in private practice found that the Alum Precipitated Toxoid produced immunity in only sixty per cent of the cases. It is also a well known fact that a child may have diphtheria although it has been given toxoid and has had a negative Schick test.

**Tetany in the Newborn.** Charles E. Snelling, M.B., Toronto, Ontario. The Journal of Pediatrics, Vol. 7, No. 4, October, 1935.

Few cases of tetany in the newborn have been reported, therefore the author feels he is justified in reporting his four cases in which tetany occurred in children three, five and seven days, and one month of age. He reviews the cases in the literature and points out the methods of diagnosis as well as therapy used by these workers.

The first case was a female child, five days of age, who was admitted to the hospital with a history of cyanotic attacks and difficulty in nursing since birth, and twitching of the body for two days. Cyanosis and x-ray examination at birth led to a diagnosis of enlarged thymus, and the child improved some under x-ray therapy. Inspiratory crow and twitching of the body were observed during examination. The bleeding time and clotting times lengthened to fifteen and ten minutes respectively. Spinal fluid was negative. The blood calcium was 7.2 mgs. per cent, but the phosphorous content was not determined. Ten cubic centimeters of calcium gluconate intramuscularly, and a transfusion relieved the symptoms. Three days later another attack occurred, and it was relieved by ten per cent calcium gluconate given intramuscularly. Ten drops of viosterol and thirty grains of calcium chloride by mouth prevented the recurrence of symptoms.

The second case, a one week old baby, was admitted with a history of normal birth, but convulsions three days previously. Physical examination and spinal fluid were negative. The serum calcium was 5.7 mgs. per cent, but the phosphorous was not determined. The child was given seventy-five grains of calcium chloride daily by mouth for one week. There was no recurrence of symptoms.

The third case was a premature baby one month of age. Birth weight was three and one-half pounds, and on admission weight was four pounds. The history was negative until three days previous to admission when three convulsions occurred; the seizures had been frequent since that time. During examination inspiratory crow and fine twitchings



of the extremities were observed. The serum calcium was 5.2 mgs. per cent, and the serum phosphorous 11.1 mgs. per cent. Five cubic centimeters of calcium gluconate (ten per cent) administered by mouth relieved the symptoms for one day, then the child began to twitch slightly and collapsed suddenly and died immediately after a feeding.

The fourth case was a three days old baby admitted with a history of convulsions for one day. Labor had been prolonged and resuscitation difficult. Physical examination revealed a well-developed male exhibiting intermittent convulsive movements and nystagmus. There was no question of edema. Cerebrospinal fluid was not obtainable. The blood serum calcium was 8.8 mgs. per cent, but the phosphorous content was not determined. Five cubic centimeters of ten per cent calcium gluconate intramuscularly, and fifty grains of calcium chloride for three days, followed by thirty grains for two weeks prevented recurrence of symptoms which had disappeared in twenty-four hours.

Note: The last case is particularly interesting because of the comparatively high serum calcium. It would have been interesting to have had a serum phosphorous determination on this child, because as some of the cases in the literature indicate, and as the experience of the abstractor has shown, tetany does occur at times when the blood serum calcium is not diminished but in which the serum phosphorous is increased. Some investigators have explained the condition on the basis that the increase in the phosphorous in some way inhibits the ionization and absorption of the calcium although the amount in the blood is not appreciably altered.

No doubt tetany in the newborn occurs more frequently than it is generally supposed, but a great deal of research should be done on calcium and phosphorous metabolism, before a great deal of progress can be made. I do not advise the indiscriminate administration of calcium gluconate either intravenously or intramuscularly. It should not be given until the diagnosis of tetany has been definitely established.

## EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.  
911 Medical Arts Building, Tulsa

**Parinaud's Syndrome. Lewellys F. Barker, M.D.**  
Baltimore. *The American Journal of Ophthalmology*, September, 1935.

A woman, age twenty-two years, was admitted to Johns Hopkins Hospital in February, 1935, complaining of weakness of the legs of one and a half years' duration, of periods of falling and inability to walk during the past three months, of earlier difficulty in chewing and swallowing solid foods, of seeing double, of weakness in the arms, and recently of inability to speak above a whisper. Her family history was negative. Her past history was negative except for the usual diseases of childhood. Her present illness began in 1931 with pain in the left knee, with later the pain being present in both hips and down the thighs. About one and a half years ago she noticed a weakness of her lower extremities, and that it was quite an effort to lift her feet. Eleven months before entrance to the hospital she began vomiting after each meal, losing a total of thirty-eight pounds in weight. Difficulty in chewing and swallowing next appeared. For the past six months she was habitually constipated. Intermittent numbness of the hands and feet occurred. It became so difficult for her to

walk that she would have to steady herself against the wall. At times she fell to the floor. Diplopia was sometimes present with other disturbed movements of the eyes. The eyes seemed to be pulled toward her nose, she said. She became more emotionally unstable as time passed. Her symptoms were quite variable as has been noted above.

Examination did not show any atrophy, spasticity or undue flaccidity of the muscles. Babinski and Kernig reflexes were negative. There is a complete neurological examination reported including the disturbances of function, if any, of the twelve cranial nerves. The Wasserman and cultures of the cerebrospinal fluid were negative. The blood and urine examination were negative. There is quite an interesting discussion of the symptoms as enumerated and of their localizing value including the complete loss of upward gaze (Parinaud Syndrome). Barker says: When we think of the symptomatology as a whole, we find that the disturbances of function point predominantly to the region of the brain stem, from the junction of the aqueduct of Sylvius with the lower end of the third ventricle downward through the mid-brain and the pons to the nuclei of the ninth and tenth nerves in the lower part of the medulla oblongata—in other words, to a diencephalic-mesencephalic-rhombencephalic syndrome.

The differential diagnosis includes pinealoma, syphilis, tuberculosis of the pons and of the red nucleus, asthenic bulbar paralysis (myasthenia gravis), epidemic encephalitis or a localized encephalitis of the brain stem or a disseminated encephalomyelitis, multiple sclerosis and hysteria. The treatment consisted of ephedrine sulphate and glycine, upon which she apparently improved. The time has been too short as yet to prognose the final termination of the case.

**Causes of Faulty Interpretation of Roentgenograms of the Sinuses. F. M. Law, M.D., New York. Archives of Otolaryngology, October, 1935.**

This paper was presented before the Section of Laryngology, Otolaryngology and Rhinology of the American Medical Association at Atlantic City this year. The author endeavors to establish a closer relationship between the surgeon and the roentgenologist. Many times the report of the roentgenologist will be modified or changed when he becomes cognizant of the clinical picture. With private patients stereoscopic films are urged but the cost is prohibitive in a clinic. This is most essential for a picture of any value in determining the condition of the sphenoid.

The technic of making the films is discussed and many things are mentioned which may lead to a faulty diagnosis. One of them is the use of the Potter-Bucky diaphragm which according to the author produces too great a contrast and a distortion of the fine bony lines. Granulations or polyps on the floor of the antrum will not be shown if the picture has been taken in the upright position. The ethmoids' and antrums' appearance is changed by a slight tilting of the head unless stereoscopic films are used. The time of exposure of the film is another important point. Too much exposure will mask the pathology of the involved sinus, while an under exposure tends to accentuate the opacity of the sinus. Some other common errors are: that the Water position will not show the posterior portion of the floors of the antrums; that the wings of the sphenoid bones may be mistaken for the anterior walls of the sphenoid sinuses; not taking into account the variability of the thickness of the anterior walls of the frontal sinuses; that sometimes the frontal

sinuses may be so involved that their outline is lost; and that anomalies should not be overlooked, for if surgery is done, it is important to remember their presence. The difference in the appearance of the acute, subacute and chronic sinus films is given.

Dr. W. E. Chamberlain and Dr. S. R. Skillern, Jr., of Philadelphia, give an interesting discussion of the paper. Dr. Skillern says to avoid sending the patient to the roentgenologist after the use of astringents, irrigation, suction, etc. He prefers to make his examination and then when the patient returns for the second visit to have the roentgenograms made before he is touched.

**Etiology of Retrobulbar Neuritis. Dr. John R. Dunnington, New York. The Laryngoscope, September, 1935.**

Weill has aptly described the condition as "a disease in which neither the patient nor the physician sees anything." Many cases recover without medication while others in spite of various medicaments progress to total blindness. The ophthalmologic picture consists of: Diminution of vision, a central scotoma and a normal fundus. The obscurity of the etiology should tend to restrain the physician from the use of radical measures until conservative methods have proven useless. Retrobulbar neuritis is a misnomer according to Benedict, because the name would indicate that the lesion was situated somewhere between the globe and the optic chiasm, while many times it is in the chiasm or behind it.

Sinusitis is one of the most commonly associated diseases of retrobulbar neuritis. Thallium is used in many depilatory creams, the use of which, has produced an ensuing optic nerve lesion. The optic nerve is also very sensitive to lead and arsenic. With the presence of a bitemporal hemianopsia one readily thinks of an optic chiasma tumor, but with a unilateral retrobulbar neuritis the possibility of an intracranial neoplasm many times does not promptly occur to the diagnostician. The discovery of pathology in the region of the sella turcica exercises the ability of the competent roentgenologist. Central or paracentral scotoma indicate that there must be repeated visual fields taken and the rhinologist who contemplates the opening of sinuses in attempt to locate the etiological factor of a retrobulbar neuritis has not completed his duty to his patient until he is thoroughly satisfied that there is not an intracranial neoplasm present.

Retrobulbar neuritis may be the first indication of a multiple sclerosis. Benedict in an analysis of two hundred twenty-five cases of retrobulbar neuritis gave multiple sclerosis as the etiologic factor in one hundred fifty-five cases. A similar opinion is shared by many prominent European writers. Adie says that thirty-eight per cent of his multiple sclerosis cases have as an initial symptom acute retrobulbar neuritis. He also calls attention to the long period that may elapse between the retrobulbar neuritis and other signs of multiple sclerosis. The average time is eight years and the longest on record is twenty-four years. In addition to the other examinations we are cautioned not to overlook a neurological examination.

Sluder's description of hyperplastic disease of the sinuses, especially the ethmoid and sphenoid, did a great deal towards stimulating the exploration of the sinuses in cases of acute retrobulbar neuritis. Onodi, Loeb and Schaeffer concurred in this opinion. Von Der Hoeve says that a diseased sinus may affect the optic nerve by direct spreading of the inflammation, by pressure by the walls of a dilated sinus as we see in the case of mucocele

where every nerve in the neighborhood may become atrophic by pressure, and by the deleterious influence exercised by toxins, edema, congestion, etc. Where formerly there has been a great deal of intranasal surgery in connection with retrobulbar neuritis the pendulum is now swinging to the other extreme. Benedict in his analysis of two hundred twenty-five cases gave sinusitis as an etiological factor in only one case. Even in massive purulent sinusitis it is generally agreed that an optic neuritis is a rare complication.

The author urges the rhinologist to no longer be a surgical tool in the hands of the ophthalmologist and to have many repeated thorough examinations before proceeding with the exploration of the sinuses.

**Septicaemia Following Tonsillitis. Operation. Death. Abstracted by A. R. Tweedie from the Vienna Laryngological Society Proceedings, Published in the Journal of Laryngology and Otology, October, 1935.**

A specimen was shown, taken from a man age twenty-two who suffered from a left-sided sore throat on April 1st, from which he recovered uneventfully, but which was followed by an infection of the right tonsil. Clinically the condition was due to a Plaut-Vincent infection which was confirmed by bacteriological examination. For this he had been under treatment for eight days, but one and a half days before admission to hospital a severe hemorrhage had occurred from the right tonsil. With a temperature of 39.8 degrees C., a pulse rate of 154, and a feeling of shivering (although no actual rigor had occurred). He presented the picture of a severe septic condition.

The site of the right tonsil was occupied with a greyish clot reaching almost to the middle line, whilst the corresponding lymphatic glands were involved and tender.

The local appearance and the general severity of his condition made it imperative that, as a last resource, resection of the jugular vein and extirpation of the right tonsil should be undertaken. A blood transfusion was given previously, but on incision of the skin death occurred on the table from failure of both respiratory and cardiac action, and all attempts at restoration failed.

Subsequent direct examination of the blood and also attempt at culture proved negative.

At the post mortem examination the site of the right tonsil, the pyriform fossa and the pharyngeal wall were found to be occupied by necrotic tissue, whilst an erosion of the wall of the internal jugular vein, in direct communication with this necrotic area, was also discovered.

In the discussion that followed, similar cases were quoted and it was pointed out that the report of a Plaut-Vincent infection in such cases did not necessarily exclude other concomitant septic infection, which probably contributed towards the fatal termination of the case. F. J. Mayer.

**DERMATOLOGY, RADIUM AND X-RAY THERAPY**

Edited by William E. Eastland, M.D.

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**Technic of Treatment of Cancer of Cervix with Radon. Frank Edward Simpson, M.D., Radiology, Vol. XXIII, No. 2, August, 1934, 170-172.**

The author states that the prognosis of uterine carcinoma depends upon two important factors and



they are the extent of the tumor and the technic of treatment. In regard to the first factor it is stated that if the tumor has extended slightly to the parametria or adjacent vaginal wall the outcome may be favorable, if the radiation can reach the malignant part. If the tumor has extended beyond the parts approximated by radiation, such as the lymph nodes, the results will be poor. Results are very striking in cervical carcinoma when conditions are favorable to radiation. Inasmuch as a great deal depends upon the technic, Simpson goes into his idea of radiation therapy of carcinoma of the cervix. In considering this proposition he takes it up point by point as follows:

First, "Shall radium or radon be used?" He prefers radon because it can be introduced into a small tube without necessitating cervical dilatation.

Secondly, he speaks about the use of small quantities of radium instead of radon, but Simpson believes that relatively large quantities of radon used over a short period of time are as valuable as small quantities of radium used over a long period of time.

Thirdly, the proposition of dilating the cervical canal is considered. Any traumatism dealt to the cervix in dilating the canal is regarded as extremely hazardous in promoting metastasis. For that reason he recommends the use of radium against the cervix until the cervical canal has become patent.

Fourthly, the insertion and withdrawal of radium from time to time in a course of treatment is considered, and he condemns this as another means of producing trauma and favoring metastasis.

Fifthly, the implantation of radium needles in the cervix or parametrium is considered. This is favored and can be limited to small, well circumscribed lesions which do not yield well to surface radiation. In the event that the field is infected, implantation produces a definite hazard as may be caused from trauma and thereby introducing infection systematically. As a whole he is very much opposed to the general use of implanting radium into the cervical tissues.

Sixthly, dosage is considered. Simpson believes that as a whole too much radiation is given to the average case. A separate section is given to the consideration of technic. The preliminary preparation of the patient with douches in an effort to clean them is regarded by him as unnecessary. He is quite opposed to grasping the cervix with a tenaculum or curetting or cauterizing the growth. First, external radiation against the cervix is applied in the lateral fornices and against the lesion itself. This is done by exposing the cervix with a bivalve speculum and covering it with a four mm. gold plate, which protects the rectum. Then, an applicator containing approximately one thousand mc. of radon is held in place against the carcinoma. The speculum is then filled with gauze packing and it is all held in place by a special T-binder. These treatments last about fifteen to twenty minutes. A few days later a second irradiation treatment is given at another location against the cervix or in one of the lateral fornices. This method is repeated until about three thousand mc. hours have been given. When the cervical canal has become patent, which may require all the way from a few days to a few weeks, a cervical applicator is then inserted. This applicator consists of a tube seven cm. long and containing six hundred mc. of radon which is left in four hours or less. Simpson regards six thousand mc. hours as a maximum total dose and feels that it should be used only occasionally. Such treatment requires about three weeks' time. Additional irradiation through the

pelvic girdle may be given in the form of a radium bomb or deep x-ray therapy, although the author questions how much this influences the final outcome. This treatment allows most patients to remain ambulatory. Simpson advises against using curative measures when only palliation results are expected.

#### **A Method to Render Radio-Resistant Tumors Radio-Sensitive. M. J. Sittenfield, M.D., Radiology, Vol. XXII, No. 4, April, 1934, 490-492.**

The author first discusses the variation of tumor cells in their reaction to radiation therapy; that is, their radio-sensitivity and radio-resistance. He contends that a small dose of radiation stimulates the function of the cell, whereas, a larger dose retards the action of a cell and intense dose destroys the cell in a caustic-like manner. The essayist then points out that radiation given to tissue has a primary and secondary reaction. In the first instance the effects may be so slight as to be followed by a total recovery of the cell. In the second instance, if the dose is intense, destruction may be so great that it is beyond the stage of repair. In addition to the type of radiant energy utilized in treating, the physiologic and biologic condition of the cancer cell, as well as the condition of the healthy, surrounding tissue, must be considered. Considerable mention is made of the effects of the surrounding tissue cell in its anti-carcinomatous reaction as produced by the effects of x-ray. Different experiments have been developed to prove out the contention just mentioned; for example, when a tumor is cut out following radiation and planted in a new location the tumor cells quickly recover from the radiation effect and resume their former rate of growth just as it is shown that radiation is not merely an action on the cancer cell per se, but also of the cancer bed, in its ability to assist in killing out the carcinoma. The fact is then brought forth that the greater the number of cells within a tumor that are undergoing mitosis the greater is the radio-sensitivity of that tumor. This being true, it shows that the cancer cell is particularly susceptible to radium energy during mitosis. Basing his deduction on the former facts, Sittenfield concludes that cancer cells should be excited to greater mitotic activity in order to render them more radio-sensitive to radiation sources. To this end he advocates the use of small doses of radiation, believing this will increase the metabolic and biologic function of the cell. This increase in activity goes on until the cell becomes exhausted and finally ceases functioning. Consequent to this stage the anti-carcinomatous reaction of the surrounding tissue offers active resistance to the progress of the malignancy and subsequently favors the development of the fibroblastic element.

#### **Lymphoblastoma: A Generalized Disease. George W. Holmes, M.D., Radiology, Vol. XXIII, No. 1, July, 1934, 17-21.**

Reference is first made in this article to the term "lymphoblastoma" stating that it was suggested by Mallory and later defined and elaborated by Viets and Hunter. The term "lymphoblastoma" includes the following conditions: lymphosarcoma, Hodgkin's disease, lymphogranulomas, pseudoleukemia, lymphatic leukemia in its aleukemia form and the skin manifestations of lymphoblastoma. Lymphoblastoma is a progressive disease which usually is fatal, that may occur at any age in either sex, and can involve any tissue in the body although it properly belongs to the glands of the neck and mediastinum. Its course is occasionally rapid but more frequently chronic.

Response to irradiation is ordinarily prompt and rather spectacular, causing the tumor masses to disappear under thorough treatment. At first this disappearance is more complete and allows the patient to return to work, but as time goes on the effect is less and less until finally it is practically nil. The author especially calls to attention that in attempting a diagnosis of any obscure condition, lymphoblastoma must be kept in mind on account of its ability to involve any tissue in the body. A considerable detail is given in regard to various anatomical locations. In lymphoblastoma of the chest the disease first involves the peritracheal glands. Later on, the hilus and peribronchial glands become larger and in the more advanced stages there may be actual infiltration of pulmonary tissue. Rarely there may be a miliary-like process throughout the lung tissue. It is not unusual for the condition to extend to the pleura producing fluid in the pleural cavity. Holmes then goes into more detail of the differential diagnosis as determined by radiographic work.

Next, lymphoma of the gastro-intestinal tract is discussed. The author has seen about twenty-five per cent of the cases in which lymphoblastoma was in the gastro-intestinal tract and in these cases the lesions are more often multiple, thereby helping in differentiating it from malignant disease. A number of good points are made in regard to differential diagnosis as determined by radiographs. It is quite essential to differentiate lymphoblastoma from malignancy, as the latter condition requires a great deal more radio therapy than the former. Radio therapy should be preceded by surgical removal of the tumor mass, as the rapid breaking down of a tumor from x-ray therapy may cause a perforation and peritonitis. This is less likely to happen if the tumor has been surgically removed first.

The author next discusses lymphoblastoma of the bone. It is regarded as an unusual finding and is considered as secondary to other tissue involvement. The sternum is most frequently involved. Bone tissue gives some response to radiation. In addition to being able to involve any tissue in the body, lymphoblastoma rather frequently involves the brain, cord, urinary tract or any organ of the body.

**Acne Vulgaris and the Roentgen Rays.** George M. MacKee, M.D., and Franklin I. Ball, M.D. *Radiology*, Vol. XXIII, No. 3, September, 1934, 261-266.

This article reviews 5,376 cases of acne and it is a statistical report showing what treatment will do with and without the use of x-ray. Due to the very valuable summary with points given below this will be quoted verbatim. Some of the conclusions in a few of the paragraphs are not very favorable to roentgen therapy. However, the last paragraph, number ten, is the one that sums up the whole situation in spite of some discouraging results.

"1. Of 5,376 records of cases of acne vulgaris, 606 patients were given x-ray treatment and continued such treatment until it was discontinued by the physician. Contact with these patients was maintained over a period of years.

"2. Four hundred and twenty-two patients were treated without x-rays and remained under observation for several years.

"3. Of the 606 patients who received x-ray treatment, approximately fifty per cent received permanent cures as a result of treatment extending over periods of from six weeks to four months.

"4. Of the 422 patients treated without x-rays,

about forty per cent were cured in from six months to two years, most of whom required over eight months.

"5. Without x-ray treatment, there were approximately forty per cent failures; with x-ray treatment, failures amounted to about five per cent.

"6. Complete clinical cures, and almost complete clinical cures were obtained in four months or less with x-ray treatment in about eighty-three per cent of the patients. Without x-ray treatment, about sixty-two per cent of the patients were clinically cured in from six months to two years.

"7. Recurrences are more frequent when the cure has been effected with than without x-ray treatment—about thirty per cent with x-rays; about thirteen per cent without x-rays. In the x-rays series many of the relapses occurred in patients who were below par in general health or who indulged in distinctly injurious habits; also, when the clinical cure was obtained at or shortly after puberty. For this last reason we prefer to hold x-rays in reserve until the patient is well beyond puberty.

"8. Not a single patient in this entire series, treated with the technic herein outlined, developed any injurious result from the x-ray treatment.

"9. Fewer acne cases are treated with x-rays today than a decade or two ago. This is because conventional dermatological management is constantly improving, and because there is a better selection of method and combination of methods for the given case. This trend indicates better medical instruction and training, a better knowledge of the disease and its therapeutic requirements, and an increasing disinclination to travel the path of least resistance; therefore, the trend should be encouraged.

"10. Nevertheless, x-ray treatment from the standpoint both of statistics and clinical experience, offers the most certain method of obtaining a clinical cure and even a permanent cure, in the shortest time, especially when combined with adequate general medical attention."

## ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.  
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**Ein Klinischer Beitrag Zur Kenntnis der Osteochondritis Dissecans. (A Clinical Analysis of Osteochondritis Dissecans).** John Hellstrom und Karl Ostling. *Acta Chirug. Scandinavica*, LXXV, 273, 1934.

Seventy-three cases of osteochondritis dissecans head, the second metatarsal head, and the talus. monographic work. In thirty-four cases the lesion was definitely of the medial condyle of the femur and in twelve it was elsewhere in the knee joint. There were twenty-four cases with involvement of the elbow, and one each of the second metacarpal head, the second metatarsal head, and the talus. There was a predilection for the laboring class and for young adult males. The lesion was bilateral in the knee in four cases and in the elbow in two.

Symptoms were tabulated in the order of frequency. Pain and limitation of motion were prominent in the elbow; while hydrarthrosis, locking, obvious free body, and pain were important in the knee. Locking occurred even before a free body had separated. In three cases there were no symptoms. Theories as to etiology were reviewed. The lesion



may be purely traumatic, but in the spontaneous type there may be a predisposition due to constitutional and hereditary factors. A review of roentgenograms of one thousand five hundred elbows and bilateral studies of the elbows of two hundred six males without local complaint showed that osteochondritis of this joint was less frequent in this series than in the series published by Nielsen.

From a study of the literature and the end results of their own cases, the writers conclude that in osteochondritis dissecans of the elbow, neither symptom-free cases nor cases with acute symptoms need always be operated upon. In the knee, operation should be the rule. The operation should include the removal of an unseparated body but not extensive excision of the bed.

**The Phosphatase Activity of Tissues and Plasma in Tumors of Bone.** Clifford C. Franseen and Regina McLean. *Am. J. Cancer*, XXIV, 299, June, 1935.

The authors present a thorough review of the literature dealing with the phosphatase activity in the tissues and blood plasma in various conditions and diseases of bone and calcium metabolism. Their original contribution consists of an extensive series of determinations of the enzyme in cases of bone tumor.

They present in detail their technique of the determination, with tables showing the effect on the results of refrigeration, of duration of the extraction period, of various treatments of the turbid extract, of centrifugalization, and of variation in the substrate employed. They also present a table of determinations on normal bone and muscle from various regions and ages.

Determinations were carried out on tissue, plasma, or both, in thirty-seven cases of primary bone tumor, numerous cases of metastatic bone tumors, osteitis deformans, and various other bone conditions, as well as miscellaneous tumors of other organs. In general it was found that the determinations made on the plasma paralleled those made on the tissues.

Inconsiderable or slight increases of phosphatase activity were observed in cases of osteochondroma, adamantinoma, endothelial myeloma, giant-cell tumor, and the osteolytic type of osteogenic sarcoma. Marked increases were observed in all cases of the osteoblastic type of osteogenic sarcoma. Osteitis deformans and generalized osteitis fibrosa cystica also uniformly showed elevations in the plasma-phosphatase activity. Likewise, metastatic lesions of bone showed an elevation, probably due to the reparative attempt at osteogenesis. Cases of multiple myeloma showed phosphatase activity within normal limits.

The course of some of the patients with osteogenic sarcoma was followed by repeated determinations. It was found that after operation the phosphatase activity rather promptly drops to normal; that it rises again with recurrence or development of pulmonary metastasis. Transitory fall in phosphatase following x-ray therapy was noted. A fall was also noted as a terminal phenomenon in two advanced cases.

The authors conclude that a high value is strongly suggestive of osteogenic sarcoma in the absence of osteitis deformans, generalized osteitis fibrosa cystica, extensive metastatic disease of bones, and jaundice. They also suggest that a phosphatase determination may be of use in differential diagnosis of metastatic carcinoma of the bones and multiple myeloma. They adhere to the

theory that the phosphatase is synthesized by the osteoblasts, and that the increase observed in osteogenic sarcoma is another instance of neoplastic cells continuing to produce a physiological secretion—in this instance an enzyme.

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
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**Delayed Death From Pulmonary Embolism.** M. W. Shulman, M.D. *American Journal of Surgery*, November, 1935.

Sudden death from massive pulmonary embolism following venous thrombosis in the lower extremities is by no means uncommon. In general, there are two groups of cases: The first comprises those in which, following trauma of the lower extremities, thrombosis of the femoral vein occurs. This may or may not be associated with infection. The second is made up of those in which thrombosis of the femoral vein occurs after obstetrical procedures, operations in the pelvis or elsewhere in the abdomen. This usually happens in clean cases and is generally attributed to stasis. Death in such cases is usually sudden and occurs when the thrombus breaks off and is swept through to the lungs. This often happens when the patient is recovering from the effects of the operation or injury and seems to be convalescing in a satisfactory way.

However, massive pulmonary embolism is not always an immediately fatal disease. H. E. Robertson (*American Journal of Surgery*, October, 1934) has shown that both pulmonary arteries may be almost completely occluded without sudden death. He states, however, that death occurs within a few hours at the most. Post-mortem evidence confirms this when the embolus is found to be organized and adherent to the intima of the pulmonary artery. Yet this takes time.

Two cases are reported in this article where the clinical history and the pathological findings show that massive embolism may occur and still the patient live for some days after. These patients lived seven days after the release of the thrombus. Reports of this type of embolism are rare.

At autopsy these cases showed almost complete occlusion of the pulmonary arteries and their larger branches. The first case was a result of stasis in the femoral vein plus infection. The second case was a result of the stasis alone.

The medico-legal aspect is pointed out. Death has often occurred after a considerable time has elapsed and in these instances it is essential to ascertain whether the actual cause of death is legally the primary cause. This applies particularly in cases of violence where the victim dies sometimes after the initial injury. The question frequently arises whether the patient succumbed to the initial injury or not.

LeRoy D. Long.

**Surgical Significance of Endometriosis.** James C. Mason, M.D. Rochester, Minnesota. *Division of Surgery, The Mayo Clinic. Annals of Surgery*, November, 1935, Vol. 102, Page 819.

Endometriosis, adenomyosis and chocolate cysts are the most frequently employed names for the condition in which tumors are present, containing endometrium or tissue resembling endometrium

and responding to the same stimuli that affect normally situated endometrium.

Etiology is discussed briefly, including the advancement of the view by Sampson that living endometrial tissue is implanted on the pelvic peritoneum and ovaries as the result of retrograde menstruation through the fallopian tubes.

Correct pre-operative diagnosis is difficult because the symptoms vary so much. Mason lists the helpful factors in making a correct diagnosis: "(1) A patient's age of between twenty-five to forty-five years; (2) dysmenorrhea of the acquired type; (3) pelvic discomfort, often extending to the sacrum, into the rectum, or down the thighs, always worse at the time of menstruation; (4) menorrhagia; (5) sterility which may be absolute but more often is relative; and (6) dyspareunia." "A frequent finding is adhesions, causing fixed retroversion of the uterus, with or without recognizable tumor; also, thickening in the adnexal regions and tenderness on pressure. In some cases cysts several centimeters in diameter develop in the ovaries. Small irregular nodules or thickening of the rectovaginal septum, or in the cul-de-sac, best felt on rectal examination, are highly suggestive."

Incidence is hard to determine because many small lesions are unrecognizable by many surgeons and pathologists in routine examination. The situations where heterotopic endometrium have been found are listed: "(1) in the uterus, when the growths may be diffuse or discrete and (2) outside the uterus where they may be in the ovaries, rectovaginal septum, uterine ligaments, fallopian tubes, abdominal wall, umbilicus, groin, intestinal wall, wall of the bladder, or the vagina."

Masson has included a list of the situations and number of cases for each found in operations performed at The Mayo Clinic, 1923-34, inclusive. There was a total of five hundred seventy-six patients with four hundred eighty-two of these having involvement of the uterus. As some of these had more than one organ affected the total organs affected was six hundred eighty-nine.

In diffuse adenomyosis or endometriosis, Masson favors hysterectomy and removal of both ovaries if the patient is at the menopause age or close to it. If the patient is less than forty-two he advises salvage of some ovarian tissue with the important reservation that "there is no ectopic adenomyoma." (In the diffuse type this reservation can rarely be met.) "Radium is being used, I think, too often in these cases, and with rather unsatisfactory results." By the term diffuse adenomyosis the author apparently means diffuse involvement of the uterus without necessarily implantations elsewhere.

"Discrete adenomyosis is the name applied to a condition in which small circumscribed tumors appear in the uterine wall." "Among younger women, myomectomy is advisable but among women who are close to the menopause hysterectomy is justifiable, especially if the tumors are large."

Adenomyomas of the abdominal wall, seen a few weeks after operations in which the endometrium has been exposed, cause painful tumors, varying in size with menstruation. They are best widely excised mid-menstrually.

Endometrial tumors of the rectovaginal septum offer many difficulties in treatment. If neglected, they may grow into the rectum sufficiently to cause obstructive symptoms. In other more frequent cases they invade the vagina, and a blue domed cyst or a mass of polypoid uterine mucosa may be noted in the posterior fornix. In such cases local treatment of the growth is not necessary and the simpler

and simpler procedure of removing the ovaries will allow regression. The condition must be remembered in seeing such lesions or many unnecessary major resections of rectum and surrounding organs will be done.

Many lesions in the form of blood filled cysts are found in the ovaries, while all hemorrhagic cysts of the ovaries are certainly not endometriomas. "Although conservative operations are advisable in these cases, secondary operations are frequently necessary when any ovarian tissue is saved."

Growths which resemble endometrioma developing in the intestinal wall are most likely to be confused with malignancy or diverticulitis. On exploration the external appearance of the bowel may suggest malignancy but usually a definite diagnosis can be made by the presence of adenomyomatous tissue at the point of adhesions or on the surface of the bowel. In such conditions removal of the ovaries is sufficient to allow the adenomyomas to undergo atrophy.

Adenomyomas involving the bladder wall cause vesical irritation, increased frequency of urination most marked at menstrual time, and hematuria. "Excision is advisable in all cases in which patients constitute good surgical risks, and when it is possible to remove the tumor without traumatizing the ureters. In the latter type of cases, removal of all ovarian tissue will cause rapid atrophy of the tumor."

True umbilical adenomyoma becomes larger and more painful at the time of menstruation and may discharge small amounts of dark bloody material. They are best treated with removal of tumor and umbilicus with overlapping type of closure.

Comment: Endometriosis is far more common than generally appreciated. In this report ten per cent of all the uteri removed for myoma at the Mayo Clinic revealed adenomyoma. The scarcity of its reported presence in other groups of uteri removed for the same cause must lie in inadequate pathological study of the specimens removed at operation.

In my own experience I have treated four striking examples of endometrioma within the last six months. Two of these were of rectovaginal septum location, one of the bladder wall and one in the inguinal region in a patient with no previous operation.

In patients where conservative operative procedures are employed and ovarian tissue is left, the closest of observation is necessary. If all the growth has not been removed under such circumstances, the most amazing extension and invasion will occur within a few weeks. Long delay in secondary operation and removal of the remaining ovarian tissue may make a difficult operative procedure in an already transformed pelvis extremely hazardous.

Where endometrial tumors of the rectovaginal septum have invaded the posterior fornix of the vagina, small nodules may be felt but the visualization is poor by the use of the ordinary bi-valve speculum with the patient in the lithotomy position. When this condition is suspected, or for that matter when any lesion is suspected in the vault of the vagina, the knee chest position offers opportunity for excellent visualization. In one of the recent patients with rectovaginal endometrioma a diagnosis of cancer had been made yet on using this simple method of examination a blue domed cyst was visualized and biopsy showing endometriosis obtained. In another patient a neglected car-



cinoma of the vaginal vault was easily visualized, which was all that was needed for diagnosis, though it was proven by biopsy.

Wendell Long.

**Differential Diagnosis Between Jaundice Due to Obstruction and Jaundice Due to Hepatitis.** (Quelques Elements de Diagnostic entre les Icteres par Obstruction Cholelithique et les Icteres par Hepatite). By Marcel Brule and Jean Cottet, La Presse Medicale, November 2, 1935.

After a preliminary statement that complete retention of bile with decoloration of the stools is associated with either obstruction of the principal part of the biliary tract or to an infectious hepatitis involving the liver cells, four differential signs are indicated and discussed, as follows:

1. **Hepatomegaly.** The position is taken that the liver is always strikingly enlarged in obstruction of the common bile duct, that it can usually be palpated below the costal margin, that the inferior border is enlarged and rounded, and that it is very tender in a recent obstruction. The liver is soft and not firm, as in hypertrophic cirrhosis.

2. **Troubles in connection with the glycogenic function of the liver.** The important practical conclusion is that, after the ingestion of galactose, there is in jaundice due to hepatitis a distinctly more pronounced galactosuria than in jaundice due to principal duct obstruction early in the disease. For example, in diffuse parenchymatous hepatitis the figures may be anywhere from twenty to seventy per thousand in the first sample of urine recovered within a few hours after the ingestion of galactose, then rapidly diminishing in amount. In jaundice due to obstruction of the common duct the first sample may be as low as six per thousand.

This sign is considered of relative importance in the early development of jaundice if it is repeated in a systematic way.

3. **Troubles in the transit of water.** This is studied in connection with the urinary output. There is a long technical discussion of the subject, but the principal conclusion of interest to the clinician is that in common duct obstruction the amount of urine is decreased at first, but gradually increases in amount from day to day, while in jaundice due to hepatitis there is, at first, an increased output tending to disappear from the tenth to the thirtieth day.

4. **The retention of the two principal elements of bile—bilirubin and bile salts.** The discussion under this heading is interesting, but it hardly leads to any conclusion giving more information than can be secured by the van den Bergh test.

LeRoy Long.

#### Gastro-Intestinal Principles Excepting Those Having Antianemic and Circulatory Effects

A. C. Ivy, Chicago (Journal A. M. A., August 17, 1935), points out that the administration of adequate amounts of raw pancreas or active pancreatic extracts orally in the presence of a deficiency of the external pancreatic secretion has a firm theoretical basis. The value of raw pancreas given orally to depancreatized dogs is established, the chief value of the therapy apparently being to prevent fatty degeneration of the liver. There is some evidence indicating that administration of raw pancreas and pancreatin to animals and patients having a definite deficiency of pancreatic secretion decreases the loss of fat and nitrogen in the feces. Such therapy has been used in sprue and other conditions, but its value in these has not been definitely established.

#### Cholecystic Disease: Comparison of Clinical With Cholecystographic Data Concerning Five Hundred Patients Not Operated On

B. R. Kirklin and Thomas W. Blake, Rochester, Minn. (Journal A. M. A., November 2, 1935), believe that the reliability of cholecystographic data relative to patients whose symptoms do not warrant surgical intervention cannot be determined with finality except by subjecting a large number of such patients to cholecystectomy, and that is unthinkable. Even the most critical comparison of clinical with cholecystographic observations relative to patients not operated on cannot be decisive, for there are wide variances in the individual experience of clinicians. Nevertheless, such comparison is the sole available method of approach, and they have attempted to make an analysis of this sort. The material comprised the records of five hundred patients examined both clinically and cholecystographically at the clinic but not operated on. In two hundred of the cases no shadow of dye had been discernible, and a report of nonfunctioning gallbladder had been made; in one hundred the shadow of dye had been only faintly discernible, and a report of poorly functioning gallbladder had been made; in two hundred the cholecystographic response had been normal. In one hundred eighty-five of the two hundred cases in which there were nonfunctioning gall bladders, according to the cholecystograms, a clinical diagnosis of cholecystic disease was made. Among the fifteen exceptions, a questionable diagnosis of cholecystic disease was made in one instance, the cholecystographic report of nonfunctioning gallbladder was recorded without comment in two, and disease of the biliary tract was not mentioned in twelve. In eighty-one of the one hundred cases in which there were poorly functioning gallbladders, a clinical diagnosis of cholecystic disease was made. Among the nineteen exceptions were one case in which one of the consultants held the opinion that the gallbladder was at fault and should be removed, five in which there were various degrees of doubt as to the presence of cholecystitis, three in which the cholecystographic report was cited without comment, and ten in which disease of the biliary tract was not mentioned. In one hundred eighty-eight of the normally functioning gallbladders, disease of the biliary tract was not mentioned by the clinician in the record. Among the twelve exceptions, the clinician made a definite diagnosis of cholecystic disease in three cases and noted the possibility that such disease might be present in nine. Thus the results of the study do not confirm any mistrust that the test of function by cholecystography, as a basis for judgment whether the gallbladder is probably diseased or normal, is less reliable in cases in which operation is not performed than in cases in which it is performed. On the contrary, in 90.8 per cent of these five hundred cases the cholecystographic report was in consonance with the final clinical opinion, and this closely approximates the accuracy of cholecystography as proved by operation.

#### "Crossing One's Bridges"

A missing front tooth was the necessity that mothered the invention of bridge work, according to Dr. David W. McLean in chapter XII of "These Teeth of Mine." The article, entitled "Crossing One's Bridges," appears in the December Hygeia. "The life of a bridge is the life of the bone supporting its abutment teeth. That bone melts away if too much force is applied to it. The test by which it stands or falls is not its name, its shininess or its appearance in the mirror. Chewing is the test."

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